241 [132] wet season throughout the Northern Territory. On the Mount Lamington foothills, the dry season is comparatively short and somewhat undependable, but it is usually over by the beginning of September. Here cultivators must be sure to have enough dry weather for a successful burn prior to planting. 'A significant proportion of the mineral energy upon which swidden cultivates draw for their growth comes from the ash remains of the fired forest, so that the completeness with which a plot is burnt is a crucial factor in determining its yield, a fact of which probably all swidden cultivators are aware.' (Geertz 1966: 22–3) Furthermore, it is unwise to leave the burn until too late in the dry season, for if the soil has dried out (which it does quickly in the tropics), taro plants develop few shoots, so that the gardener may be short of shoots for planting out. Hence, I was told, a very substantial amount of clearing and planting needs to be done between June and August. There is thus a flush of produce nine or ten months later, i.e. from April to June. The same rhythm also applies in drier areas, nearer the coast, such as Inonda, because there the danger of the soil drying out is even greater and the dry season much longer. When we find that the principal Orokaiva feasting season is from April to June, we can see that this is ecologically determined, as it is then that taro is most plentiful.[5]

243 476 While most subsidiary crops are grown in the taro garden, it is a fixed rule that taro and yam should never be grown together. While taro is usually grown by individual households, yams are planted and harvested by co-operative groups, around the same time as the main taro planting and harvest, but yams are usually stored for several months until the next dry season. Yam houses are built in yam gardens and used for the storage of no other crop.

245 249 177 473 *Arboriculture.* Although the Orokaiva traditionally planted coconut, betel-nut and a few other trees in gardens, villages and in the bush, their arboriculture used to be rudimentary in comparison to their precise and detailed attention to tubers, especially taro. The Australian authorities had hardly established themselves in Papua before they began to press the population into extensive arboriculture that would yield a cash income. One of the early 'native regulations' (No. 121, passed in 1903), compelled all Papuan villages to grow a stipulated number of rubber trees. Three such rubber stands were established at Sivepe, ranging from one half to three acres in area, all village men supposedly sharing in the work. Rimoldi (1966: 86–93), who describes in detail the vicissitudes of exploitation of these trees, shows how ill-adapted communal rubber stands are to a society lacking institutions for the distribution of corporate assets to its members. Nonetheless, a further stand was established, this time quite voluntarily, in 1964. They are known as the 'company trees', have not yielded any cash, and will be discussed in detail below as the land transactions involved cast light on the ideology of contemporary Orokaiva co-operative movements.

245 473 'Communal' village plantations for coffee were established in the Northern District under the same regulations as applied to rubber, but all producing trees in the villages I visited had been grown on quasi-individual holdings. First plantings were around 1955. On a rough estimate I would say that the number of trees in Sivepe and Hohorita, two villages on the foothills, were 3,500 and 15,000, while Inonda, on alluvial plains, had 800. Coffee is one crop that

actually has provided the Orokaiva with a reliable and substantial cash income 245
for some years. This is true to a very minor extent for the third cash crop 473
promoted on a major scale, copra, which was grown especially near the coast.
The coffee is processed and sent to a co-operative factory as parchment, for
which purpose many villages own one or more hullers. Copra is supposed to be
dried in driers built in the villages, but the one I saw in Inonda had broken down
and seems unlikely to be repaired.

Clothing. The traditional Orokaiva costume was a skirt for women and a 291
perineal band for men (Williams 1930: 32–4). Boys went naked until some time 287
before puberty, girls until after puberty seclusion. These garments were made of
barkcloth obtained from trees which were mostly grown in gardens for this
purpose. Larger garments were used for wrapping round the shoulders in cold
weather, and also for shrouds. This mode of dress was abandoned in the 1950s, so [177]
that today the Orokaiva buy their clothes almost entirely from trade stores and [438]
at mission bazaars. Traditional dress is used for dances, initiation ceremonies and
other special occasions. For this reason bark-cloth trees (such as the *ajimo*) are
found rather infrequently in gardens today. Bark-cloth is still being painted with
decorations in traditional style and with a mixture of traditional and trade dyes.

Housing. Villages are in flat clearings where the grass is kept scrupulously 361
cut and from which the women regularly sweep away rubbish. Houses (*bande*)
are built in two facing rows, each house normally being occupied by one nuclear
family. The roof of sago thatch slopes down from a central ridgepole. Wall 342
construction has been in various styles since Australian contact, but today [177]
vertically set sago-branch midribs are becoming old fashioned in some areas and
vertically laid shingles, about 6 ft. by 5⅜ ins., are being adopted in villages
desiring to show they are tuned in to modern life. A great number of tree species 313
must be used for the various parts of the house. Materials are taken as much as
possible from reverted gardens which contain small trees. For a number of
purposes large trees with trunks of high-quality slow-growing wood are
considered essential. These trees have to be obtained from areas of bush much
older than the usual reverted gardens. On the Mount Lamington foothills, such
areas are very scarce. Trees of this quality tend to be the subject of gift exchange
as between families, a subject to be discussed below.

Though it is each man's responsibility to build his own house, it is usual to 342
call on helpers, especially sons, brothers and brothers-in-law, to help with [476]
construction. Recent changes in house construction include the increasing use of
nails, though not for flooring; a remarkable increase in house sizes; the change in [177]
wall construction already mentioned, and a number of measures to 'improve'
hygiene: lavatories, rubbish holes, pens for chickens, windows. The windows, an
innovation promoted by the government to combat tuberculosis, are considered
too uncomfortable in cold, wind or rain. Accordingly, they are always covered
over with pieces of timber which can be removed if the patrol officer insists.[6]

Bachelors' houses (*oro*) are of precisely the same size and construction as the 345
ordinary *bande*. The more prominent men of the village build themselves small
meeting platforms, covered with a roof but lacking walls, for the entertainment
of visitors (*arara*). In the gardens, we find small houses with an earth floor, no
walls, but a platform just below roof level. People sit in these garden houses 343

[TEXT CONTINUED ON PAGE 251

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TABLE II/4

CHANGES IN HOUSE DESIGN, HOUSE CONSTRUCTION AND DOMESTIC AMENITIES IN SIVEPE, 1936–1966

(Comparison between standards reportedly applied on four successive village sites)

Elements	1. *Pusahambo (pre-war)*	2. *Pamba (between war and eruption)*	3. *Old Sivepe (after eruption, until 1965)*	4. *New Sivepe (1966)*
Floor level	Raised on posts	Raised on posts	Raised on posts	Raised on posts
Flooring material	Betelnut, wide gaps	Betelnuts, no gaps	Some betelnut, some blackpalm	Some betelnut, some blackpalm
Windows	No windows	No windows	Small windows	Large windows
No. of rooms	Three	Three	Three	Three
Walling material	Split sago	Split sago	Split sago	'Timber'
Nails: Framing	Nil	Younger people	General	General
Nails: walls	Nil	Nil	Nil	General
Shrubs	Beside houses	Beside houses	Beside houses	To mark paths
Betelnut	Planted	Planted	Planted	Planted
Cocunut	Few	More	More	More
Waste disposal	In gully	In gully	In gully	Rubbish holes
Pigs	Present	Present	Present	Absent
Hen houses	Absent	Absent	Absent	Pens built
Lavatories	Absent	Absent	A few	General
Floor area	'Very Small'	'Bigger'	'Much bigger again' (200 sq. ft.)	'Big' (375 sq. ft.)

TABLE II/9

657 REVISED ESTIMATES OF HIGATURU LOCAL GOVERNMENT COUNCIL FOR JULY 1966–JUNE 1967 (*abridged*)

Revenues		*Expenditures*	
Tax: 2000 males	$16,000	*A. Personal Emolument*	
1000 females	1,000	Council President	$ 156
Truck Hire	13,000	Council Vice-President	108
		Councillors	1,560
Aid Post Orderlies Subsidy	1,250	Exec., Fin. Ctee	108
		Council Clerk	1,170
Water Supply Subsidy	3,320	Messenger	390
Aid Post Subsidy	240	Landrover Driver	500
		Truck Drivers	1,450
Adult Education Subsidy	780	Agric. Fieldworker	234
		Market Manager	260
Miscellaneous	2,900	Aid Post Orderlies	2,500
Total	$38,490	*Total*	$ 8,692
		B. Revenue Expenditure	
		Council Administration	$ 1,000
		Transport	5,000
		Drugs	720
		Adult Education	780
		Other Items	1,686
		Total	$ 9,186
		C. Capital Expenditure	
		Drivers' houses (2)	$ 2,200
		Council Staff House	800
		Council House Furniture	500
		Market Building	1,500
		Staff, House, Health, Personnel	800
		Water Supplies (16 villages)	6,565
		Clinics (3 villages)	900
		Roading (3 projects)	6,070
		Other Items	2,099
		Total	$21,434
		Grand Total	$39,212

Council were road building, improvement of water supplies, building medical aid posts, maintaining produce markets at Popondetta and Saiho and the operation
[651] of trucks to provide extra revenue. Most revenue was derived from a head tax of $8 per annum for every adult male and $2 per annum for every adult female. The central government paid a 50 per cent subsidy on certain Council projects.
[474] Between 1959 and 1962, the Council also ran the coffee processing factory
[245] operated for Orokaiva producers, but this was transferred to the control of an

Orokaiva Coffee-Grower Society, a producers' co-operative formed for the purpose. 657

245 The Council is made up of twenty-six Orokaiva members who are paid a monthly stipend. However, in practice a government adviser attached to the Council appears to determine policy. Indigenous attitudes to the Council are analysed in detail in Schwimmer 1967. Together with the Coffee Society, it has offered the Orokaiva some political participation and the importance of this new departure is vividly recognised by the people. 474

The New Age. Since the Second World War, a great many ideas from the outside world have been communicated to the Orokaiva. I have already mentioned economic, and some political ideas; in addition, the Anglican mission began to attract many converts, especially after the Mount Lamington disaster. By 1964, the great majority of Orokaiva were baptised. 177 797

The establishment of the House of Assembly in Port Moresby, giving limited powers of political decision to Papuan representatives elected by universal suffrage, has introduced new patterns in village life: meetings with the local member, with other candidates, and with organisers acting for these candidates and presenting political argument. The personnel of the local government council tends to be deeply committed in national politics and to talk about political affairs when visiting villages. 641 666

During such discussions, the Orokaiva are beginning to learn that an end to Australian rule is conceivable and that they will have some voice in decisions relating to the independence of their own country. They fully recognise that this makes an immediate difference to the balance of power between themselves and 648

TABLE II/10

EDUCATION AND OCCUPATIONAL EXPERIENCE OF THE JEGASE AND SEHO CLANS OF SIVEPE COMPARED – ADULT MALES ONLY 464 871

Approximate Period	*Education*		*Occupational Experience*	
	Seho	*Jegase*	*Seho*	*Jegase*
Nil	6	6	4	5
1 year	–	1	1	2
2 years	–	2	1	–
3 years	–	1	–	–
4 years	–	2	–	2
5 years	–	–	–	1
6 years	–	1	–	–
7 years			–	–
8 years			–	–
Over 8 years			–	4
Data vague	2	1	2	–
Total	8	14	8	14

614 protection was now demanded on pain of eviction. Around the same time, coffee
423 was being introduced in Inonda as a cash crop, but none of this was planted on
Tandai'undi land. Three men who had land derived from a different source
425 planted coffee there in 1955 but the other families who had only Tandai'undi
[422] land had planted none as late as 1967. They feared that if they did, there would
[245] be trouble with the Tandai'undi.

There are many examples in other parts of Orokaiva territory to show that
these fears were fully justified. To confine myself to Sivepe, where my data are
most detailed, I found that although more than half the land was occupied by
423 rights other than patrimony only two out of fourteen coffee gardens were
422 established on such land. When I inquired into these two cases one grower
425 explained to me in careful detail that he had nothing to fear because the
mother's brother who gave him the land to 'look after' had absolutely no descendants, neither male nor female, nor any brothers and sisters. The other grower, who was occupying his wife's land, was in trouble already. His solution had been to plant a second coffee garden and to promise he would relinquish the first when the second began to bear. The other twelve growers all held the view that it is better to grow coffee on patrimony land.

I know of only one case where the coffee-growing occupiers ignored the views of the holders of patrimony rights. This was in Mumuni where after some years of fruitless disputes the holders of the patrimony began to raid the coffee gardens. When the victims of these thefts asked my advice, I had to tell them that a Government Court could probably do nothing for them as I knew they had no legal title to the land.[3]

Under traditional Orokaiva law, the holders of the patrimony probably have a valid claim to cash crops. These crops may be viewed as an unforseeable increment in the value of the land transferred, an extraordinary stroke of luck. In Orokaiva religious thought, there can be only one explanation for such a stroke of luck, namely that it was given by the spirits dwelling on the land. As far as the Tandai'undi were concerned, their link with the spiritual essence of the land was still unbroken. The Andiriha were only caretakers. A perpetual gift of the land to the Andiriha does not mean to the Tandai'undi what it would mean to Europeans. Rather than a gift that is made once for all, it is a gift that is continuing to be made in perpetuity. As the function of this gift is to mediate a social transaction, it presupposes that the social transaction continues in perpetuity. If the value of the gift increases dramatically through unforeseen causes, the donors may no longer consider it appropriate for mediating this relationship, unless the rewards from the relationship also increase.

We may express this notion in the following diagram which is a modification of model 16:

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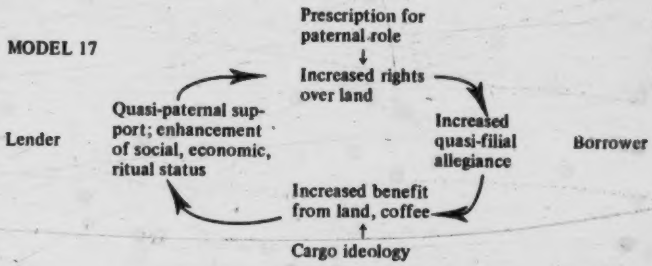
422
425

MODEL 17


Prescription for paternal role
Increased rights over land
Increased quasi-filial allegiance
Increased benefit from land, coffee
Cargo ideology
Quasi-paternal support; enhancement of social, economic, ritual status
Lender
Borrower

The argument of the Tandai'undi and other owners of coffee-producing land is that the production of coffee gives the occupiers increased rights over land so that they owe an increased quasi-filial allegiance which must be expressed in increased prestations. These may take the form of substantial gifts, a share of the crop, etc. The benefit the owners seek to obtain from the land is nearly always money.

It may seem far-fetched that my model shows 'cargo ideology' as the 177
'mythological charter' for this desire for money. It may even be argued that the 436
desire for money requires no ideological explanation. Without entering upon this
larger question, I would directly relate the significance given to money in 776
Orokaiva ideology to what has been said in the previous chapter about Jesus 782
Christ as a *dema* figure. It is He who is credited with the introduction of money into the world and this is regarded as perhaps His greatest blessing. Hence the pursuit of money is not despised by Orokaiva nor even viewed as morally neutral: to acquire money is to give evidence of having followed the precepts of the *dema.* If the mysteries of the *dema* were more fully revealed to the Orokaiva, they believe they would acquire a great deal more money.[4]

I would argue that the Orokaiva regard the coffee industry as a premonition of 245
greater wealth and power that may later come as the result of the return of the 437
ancestors. Until the coffee industry started, Orokaiva could earn money only by 435
leaving their villages to work for white men. Suddenly it became possible to
obtain equivalent amounts from the products of village soil. What stirred the 436
imagination was that a man could go to his garden, pick the coffee and then, 177
after a not too demanding ritual of processing, pour it into a bag and obtain money for it. This was not classified as work but as a kind of magic. *Work* (the Pidgin English word) referred exclusively to paid labour done for an employer. *Pure* referred more specifically to the traditional gardens. *Kapi* (coffee) was what one might compare to a 'money tree': it was the source of the benefits which enabled a village family to share in the 'new day'.

From the cases I observed at Mumuni and Sivepe I gathered that some modest 423
proportion of the proceeds of the coffee garden (like a tithe) would not satisfy 425
the owners of the land upon which coffee was grown by useholders. They 422
seemed to want all, or nearly all, the cash that could be gathered from the bushes. It was because their claims were immoderate that I began to think of the influence of cargo ideology.

602 One might well regard such immoderate claims as the response to a
423 breakdown in the social exchange relationship. According to model 17, increased
rights over land should mediate an *increased* quasi-filial allegiance, implying an
425 increased willingness to aid and share with maternal relatives. Such, however,
[245] was rarely in evidence. On the contrary, most coffee-growers, engrossed in the
new task of growing coffee, tended to ease up on their family obligations, gave
[797] fewer feasts and were apt to neglect their maternal relatives. This was especially
so because Church influence reduced the scope of initiation ceremonial which is
[881] one of the traditional key functions of the maternal family. Certainly the
maternal family hardly shares at all, under normal circumstances, in the
increased wealth generated by coffee-growing. Thus the uterine landowner feels
relatively alienated from his affluent nephew.

614 In order to demonstrate the importance of quasi-filial allegiance as a factor in
423 land transactions, I shall cite one case, again from Inonda, where coffee gardens
are being run profitably on land over which the grower holds only 'permissive'
425 rights. The three coffee gardens established in 1955, and still harvested in 1967,
are on land owned by the Endehi'undi clan but relinquished after a defeat in
[435] war. It has been used by Andiriha of Inonda since 1915. When Inonda people
started to grow coffee, Endehi'undi reclaimed this land. Inonda paid $32 in cash,
as well as pigs, traditional valuables and taro, in other words, a very substantial
consideration (Crocombe and Hogbin *ibid.*: 73) After a few years, as Andiriha
continued to benefit from the coffee, it became obvious that Endehi'undi did not
regard this consideration as a *sale* price as Andiriha hoped they would do. They
saw it as no more than a proper display of quasi-filial allegiance, and expected
this sort of gesture to be repeated, or to recover the land.

[736] The Andiriha leader now invited a widower belonging to the Endehi'undi group to move into his household. The invitation was accepted and in 1967 the old man was still there. There was no further trouble over the coffee although Andiriha did not tempt fate by making further plantings. By Orokaiva legal concepts, the balance was restored. By a shrewd manoeuvre, the Andiriha leader had found a way to offer increased quasi-filial allegiance in such a way that the profit from the coffee gardens was not reduced too much.

423 Instances of this kind help us to understand what was involved in the
425 Orokaiva system of residual or dual rights over land and dual allegiance owed by
individuals to different families from which land useholds are derived. We have
571 long tended to believe that the basic co-operating groups in primitive societies
are *corporate* groups. The Orokaiva data presented here show a second
possibility: namely a system by which individuals derive their land, and therefore
their sustenance, from a cluster of corporate groups in only one of which they
are a corporate member, although they maintain permanent exchange relationships
with the others. These other corporations do not make them permanent
gifts but leave them conditional upon the successful continuation of the
relationship. The fact that a man holds land on such terms *forces* him to
continue the relationship.

It is impossible, therefore, to say just what constitute 'residual' rights in land. In the example I analysed, it appears that a group's rights include rights to coffee when it lives in another village, but not when a member of that group stays in the house of one of the growers and is fed by that grower's wife. Perhaps the

We shall need to consider exchange from two points of view: first, as in the 121
preceding chapters, we may consider it phenomenologically, from the viewpoint
of the transactional polarity of the exchange partners; secondly, we may
consider it from the viewpoint of symbolic thought, as something like the
dialogue between *Yin* and *Yang*, as the product of Orokaiva intelligence
reflecting upon affective experience.[1] It is this second approach which will be
appropriate for much of our discussion about the remarkable Orokaiva myth of
the coconut and the betelnut.

2. *The Minor Foods: Objects of Mediation and Paired Symbols*

Although this chapter will deal mainly with the coconut and betelnut, it will be 824
useful first to set this couple into a wider ecological and cultural context. 772
Coconut and betelnut have been chosen for detailed treatment out of a large
number of minor foods of the Orokaiva, many of which have their special
importance as objects of mediation. An interesting aspect of these minor foods is
that Orokaiva symbolic thought arranges them in couples to which a male/female
opposition is usually ascribed. Very often these plant couples are grown in close [245]
association with one another and it is claimed that they will not prosper unless
they are planted together and that, in their wild state, they are also found [249]
together. The symbolic association of these pairs of plants may be based on any
of a number of shared characteristics: the similar outward appearance of the
fruit, a coincidence in the time of fruiting, a similarity in culinary use, in taste,
in supposed physiological effects of the fruit when eaten. Sometimes the pair of
plants are linked in ritual use and in a common myth.

Among examples of this pairing tendency that may be quoted are two varieties of breadfruit, called *oga* and *eumba*; two condiments important in initiation ritual: the *puga* nut and the salt vine *hoe*; the yam and a red fruit called *hamesi*. The coconut (*vu*) and betelnut or *areca* (*su*) are similarly a pair of subsidiary foods between which there are important points of resemblance which led to their being paired together, and important points of difference which led one of them to be classified as male and the other as female.

Coconut and betelnut are planted together in villages and also in gardens. [245]
Both nuts are eaten raw, young coconuts for refreshment, *areca* for relaxation, [249]
and both are consumed between meals. Both nuts grow on palms. Both foods
have notable (though different) biochemical effects on those who eat them. [262]
Both foods are standard gifts made to strangers who visit a village, a coconut [276]
being offered as refreshment immediately upon arrival while betelnut is chewed [431]
(along with *hingi* pepper and lime) during the conversation. The two nuts are
also associated in ritual use. At mortuary feasts, the most important gift objects [764]
are large quantities of betelnuts and coconuts harvested from the palms of the
deceased, while dry coconut and betelnut are strewn on graves by affines of the
deceased. Finally, coconut and betelnut are associated in an important myth [773]
which I intend to discuss in detail.

In studying plant couples such as coconut and betelnut two aspects of [437]
exchange need to be considered: first, exchanges between persons in which the
food products appear as objects of mediation and secondly, mythical exchanges
between the male and female plant, where the two plants appear as exchange

Origins of the System (1894 - 1918)

From the beginning of British administration in Papua 657
in 1888, it was policy to encourage Papuans to engage in cash 241
cropping. MacGregor, the first Lieutenant-Governor, advocated
cash cropping to those villagers he met in his tours of the
country, but such incidental advice by an intinerant official was
probably not very influential. The first legislative provision [466]
to promote cash cropping was a Native Regulation, introduced
by MacGregor in 1894, which provided that magistrates could [245]
compel indigenous people to plant coconuts on penalty of a
fine.(1) This was extended in 1903 by a regulation which pro-
vided for compulsory planting of other economic trees. Native [177]
agriculture was not, however, the main plank of agricultural
policy for although government staff were trained to "treat
natives justly" they were directed "above all to prepare the
country for development by Europeans. There is not, and
there has not been, any other policy".(2)

Planting under the regulations took place slowly, and
only in areas which were under the close supervision of magis-
trates.. It appears that there was little planting of cash crops [433]
by Papuans other than under the compulsion of the regulation
and at this stage it does not seem to have been a matter of con-
cern to the Administration whether the people planted in-
dividually or in groups. It has not been possible to determine
which pattern was most frequently followed in practice, though
the examples noted in the literature mostly involved planting by
village or clan groups rather than by individuals. Coconuts
were the main crop planted under the regulations, but rice,
rubber, kapok, peanuts and fruit trees were tried in smaller

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(1) Native Regulation No. 2, 1894. Miles (1956: 318) regards MacGregor's technique for promoting native agriculture as unusually enlightened, but in fact it seems to have been almost universal in the Pacific at that period, and MacGregor had become familiar with it while serving under Sir Arthur Gordon in Fiji. Similar regulations were introduced by Germany to Samoa and New Guinea, by the United Kingdom to Fiji and the Gilbert Islands, by New Zealand to the Cook Islands and by Holland to Indonesia.

(2) MacGregor to Lamington 4. 10. 1898 (quoted in Healy 1962 : 84).

Native plantations as the mainstay of agricultural policy (1918 - 40)

657 179 After the 1914-18 war, a shortage of labour, low produce prices and high shipping costs made it very difficult to attract European settlers to Papua. The emphasis of agricultural policy was therefore shifted and indigenous agriculture was seen as the only hope for the future. "If we cannot attract capital to develop the Territory", the Lieutenant-Governor wrote, "we must develop it without capital - that is, by native agriculture" (P.A.R. 1921-2 : 6). He saw two particular advantages in native agriculture over European; it did not require hired labour and it did not require large amounts of capital. It was clear the country would not be developed by the few European plantations then in operation (with a planted area of about 61,000 acres in 1923) and for the next decade at least Murray gave great emphasis to the development of "native plantations".

245 249 657 [466] In the Northern District(1) there had been little planting under the regulations since the turn of the century, but with the outbreak of the first world war the Resident Magistrate gave priority to expanding output by the compulsory planting of coconut, rubber and citrus trees, and 10,000 coconut and other economic trees were planted in 1914-15 under the direct supervision of patrol officers (P.A.R. 1914-15 : 49). By 1921 there were 46,404 coconut trees in the Orokaiva area but over half (25,642) had been planted within the previous five years. Almost all the rubber trees had been planted in the previous five years (P.A.R. 1920-1 : 48-50).

657 241 Although the regulations did not prescribe that planting was to be either by individuals or groups, in all the post-1914 instances we are aware of in the Orokaiva area, each village or cluster of villages was in fact directed to plant as a

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[131] (1) The Orokaiva area was included in the Buna and Kokoda Districts of the Northern Division until 1909, then in the Kumusi Division until 1920, and in the Northern Division (later termed the Northern District) since 1920.

group.(1) Group planting seems to have been the general 657
pattern in other parts of the Territory too. In the Western 241
District in particular, the Resident Magistrate initiated schemes
for cash crop plantations being owned and operated by each [423]
village as a whole. Profits were to be used for projects which
would be of benefit to the village community (P.A.R. 1913-14:12). [434]
About fifty such plantations were established under the scheme.

During this post-war drive (and probably in 1920) a 657
government officer assembled the people of the nine villages(2)
of the northern branch of the Asigi tribe and instructed them to 245
choose a site and plant an area of coconuts for the nine villages
as a whole.(3)

A central site was chosen near Ongoho on land be- 245
longing to the Akute'undi sub-clan (most of the members of
which lived in Ongoho village), and about 500 coconuts were
planted as a community project by the men of the nine
villages.(4) They were to be used exclusively for copra making
(there were ample coconut trees in the villages for domestic
use) and work and profits were to be shared equally among the
able-bodied men. Small plots of rubber and citrus trees had [249]
been established at Ongoho under the same scheme a year or
two earlier. The citrus was intended to be used primarily as a
latex coagulant for the rubber, and only secondarily as a cash [433]
crop.

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(1) In some instances in the coastal villages of the Northern District each individual planted his own trees, but all villagers planted in one "village" block on the land of one man or of one descent group.

(2) Ongoho, Hongorata, Ivisusu, Sowai, Weki, Ondahari, Oere, Girigirita and [361]
Heherita. Sowai and Weki were later abandoned and today their populations live
together at a new village named Sotokoiari. Likewise Girigirita and Heherita have [103]
amalgamated and moved to a new site. The new village is called Girigirita.

(3) Data in this section of the report was collected by interview only in the villages [124]
concerned during April-May 1963.

(4) The annual reports show that in 1921 there were 518 coconut trees over five years [101]
old and 1,287 under five years old in the Asigi area. The nine villages listed above comprise about half of the total Asigi population. The 518 mature trees were probably those planted in the villages. Trees in the community block which did not survive were not replaced, and as the ground has not been cleared since the second world war, many have died. There were 198 trees still standing in 1963.

435 At the time of planting, copra prices were relatively
245 high (averaging £32.10.0 per ton f.o.b. in 1920) but a fall in
overseas prices and the introduction of the Navigation Act in
1921 (which resulted in exports to Europe having to go to Aus-
[258] tralia first) made copra production uneconomic.(1) No copra
[249] was ever made from the community coconut grove at Ongoho,
nor were the small stands of rubber and citrus fruits ever ex-
ploited. After the war the Akute'undi, as landowners, claimed
245 the trees as their own on the ground that the community project
425 had been abandoned long before. One Akute'undi man claims
and uses about half of the trees. His father planted food crops
on that part of the land before the coconuts were planted and he
now plants vegetables between the coconuts. Each of the
resident Akute'undi men claims the right to the produce of
several particular trees on the other half. Three trees are set
aside for the medical assistant at the local Aid Post, as he is a
stranger. Most members of the other sub-clans question the
right of the Akute'undi to the exclusive use of the coconuts as
[578] all groups participated in the planting. Occasionally some
member of the other sub-clans asserts himself and collects
nuts from the "community plantation" and the dispute which is
normally quiescent flares up again.

245 Enquiries in fifteen other Orokaiva areas where coco-
nuts were planted under the regulations show that most were
258 never used for copra-making, though a few of those on the
249 coast were so used from time to time. Not one plantation was
systematically exploited. The rubber was not tapped as there
was no market for the latex, and most plantations were not
cleared after planting.(2) The citrus fruits were never ex-
ploited commercially, again because there was no market.

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(1) By 1923 average f.o.b. price per ton had fallen to £19.0.0 and by 1930 to £11.10.0. By 1934 the price was £8.0.0 per ton in London or about £4.10.0 f.o.b. Papua, though Papuans had long since stopped selling. The above prices were those paid to exporting traders, and net prices paid to indigenous producers were probably not much more than half those mentioned above.

(2) After 1941 other arrangements were made for use of the rubber plantations. For details see Rimoldi 1964.

ordinance for the appointment of officers as "controllers of 657
native plantations". The first of these, Mr. G.H. Murray, 241
was appointed in 1920 to serve the whole Territory (P.A.R. 1920-1 : 28). It was not until 1923 that a permanent officer, Mr. A.T. Dawson, was posted to the Northern District. Neither officer had been trained in agriculture.

The people of the Northern District were reported to be receptive to the idea of having their own plantations and "practically no compulsion" was applied in getting initial agreement to the principle (P.A.R. 1923-4 : 16).

Planting began in 1923 and by 1925 fourteen of the 248
plantations had been planted. Owing to a delay in obtaining cocoa seedlings from Java, 30 acres of cotton were planted in 1925 (P.A.R. 1924-5 : 27). The cotton experiment was a failure and was not repeated. By 1926 there were only 50 acres 245 ●
of cocoa, 10 acres of coffee and 6 acres of oil palm in the district.(1) [249]
Eleven of the plantations were of cocoa, one of coffee and two of oil palm. [243]
A little rice was also tried. The cocoa, oil palm and rice were soon abandoned by both government and the people owing to a drop in prices, and only the coffee was persevered with.

In 1926 or 1927, a further 116 acres of land were 245
cleared for coffee under government instructions, but the rate of expansion declined markedly thereafter. By 1936 there were 18 plantations totalling 242 acres under coffee in the Orokaiva area. 189 acres were then in bearing and the rest were expected to begin bearing by 1938. Plantings ranged in area from 4 to 30 acres.

Every able-bodied man between the ages of 16 and 36 245
years who lived within five miles of a plantation (except those 466
employed by government, missions or European plantations) was required, by regulations under the ordinance, to work 60 [651]

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(1) This figure included some private plantings in addition to those under the ordinance - P.A.R. 1926-7 : 10. Coffee seed was supplied from the government station at Higaturu.

466 days per year on the plantation of his village.(1) Those who
worked 60 days or over were thereby exempted from head tax
245 (then ten shillings per year). Those who did not were liable not
651 only to head tax but also to a fine of £2 or imprisonment with
hard labour for a period of three months.

Evidence is inconclusive as to how much work was
245 required in practice. Despite the reference to sixty days' work
466 per year, crops like coffee needed constant attention and if only
sixty days per year were to be performed by each man, either work days would need to be staggered or workers rostered. At first government officers required 120 half-days, but in most villages once the crops were in bearing all men were required to attend every morning from Monday to Friday throughout the year.(2) None of the foremen had watches and it is impossible to know how long men worked in fact, but informants in widely separated parts of the area claim that they were required to work until noon in the coffee gardens. In addition, men took turns to carry the produce on foot to the government base at Higaturu every Saturday. This involved a walk of about fifteen miles in each direction from the Ongoho (Asigi) community block.

462 Women took no part in cash cropping, but they did most of the gardening. Men sometimes helped in the food gardens in the afternoons.

657 Reports of the period contain many references to the
peoples' lack of enthusiasm for the scheme and heavy sanctions
245 were applied by government officers to have their programme
466 enforced. In 1925 the Resident Magistrate tried to extend the

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(1) Men who had been away as indentured labourers were exempt from this requirement for three months after their return to the village.

(2) At several places near Higaturu people claimed that they were required to work afternoons also during busy periods. After such periods they would be allowed a week or more off with no plantation work. It seems likely that this was done in the villages close to Higaturu which were under closer supervision by the officer in charge of the plantations. In the more distant areas the officer seems not to have delegated any authority to vary the regular pattern. Humphries (1944 : 3) notes that the specified period of 60 days (he says three months) was not observed in practice and that "in fact men were called upon to work whenever circumstances required them".

657 scheme to Ioma and other areas. At Ioma "it was only when
245 faced with the alternative of going to gaol for failure to pay tax
that they were induced to work on the plantation .... In other
466 districts the natives elected to pay their taxes in money"
(P.A.R. 1925-6 : 52). The scheme survived, according to
Captain Humphries (1944 : 2) who was at one stage responsible
for it, "only because of the gaol that loomed in the background."

697 The standard penalty for failure to work was three
[687] months' imprisonment which was served by working on the
government coconut plantations at Buna or Ioma, or on the government rubber plantation at Kokoda. These plantations were
worked entirely by prison labour (apart from supervisory and
specialist staff) and many of the older men we spoke to had
served sentences for breaches of this ordinance. In fact, as
Mair (1945 : 83) notes, the existence of government plantations
which had no provision for paid labour acted as an incentive to
prosecute for breaches of this and other laws.

Daily work on the community coffee gardens was
245 supervised by the village constables who were thus in a position
625 of considerable authority. Nevertheless, this role may not
have been particularly congenial for the constable was as likely
as anyone to be punished for failure to keep the work up to
standard. There was not a constable for each village, and the
constable at Ongoho, for example, was responsible for the nine
245 Asigi villages which worked the Ongoho block.(1) The constables in turn were supervised by Papuan foremen known as
"coffee bosses", each of whom was responsible for a number of
[657] communal gardens. The "coffee bosses" in turn were responsible to the European Controller of Native Plantations who was
based at Higaturu.

245 Such was the difficulty of getting labour to carry the
produce from the factory at Higaturu to the port of Sananand
466 (near Buna) that a special regulation was passed requiring all
465 able-bodied men to carry produce whenever instructed to do so.(2)

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(1) For supervision of the plantation and normal police services he was paid ten shillings per year.

(2) Native Plantations (Northern Division Carrying) Regulations 1928.

245 466 [465] [492] [493] No payment was prescribed, and none was made for carrying from the plantations to the depot at Higaturu. Sometimes payment was made for carrying produce the 16 miles from Higaturu to the port (usually in twist tobacco according to informants), but at other times persons convicted of breaches of the ordinance were required to carry as punishment. Mules were later introduced to carry the produce from the factory to the port, and in the late 1930's a truck was acquired to transport it from Popondetta to Sananånda. The mule train was still used between Higaturu and Popondetta until 1940.

245 177 Official reports of the period consider the reluctance of the villagers to have been due either to a lack of understanding of the benefits they would derive from the scheme or to innate laziness. C. T. Wurth, who was Resident Magistrate in 1926, considered that the people "had not grasped the advantages of the plantation and the benefits they will eventually reap" and noted that many men from the villages with plantations had gone off to work as labourers elsewhere (P. A. R. 1925-6 : 50). His successor described the "toil and disappointments" entailed in supervising the plantations and stated that the village people "have to be driven to it by the fear of gaol".(1) He was aware that there was no cash return during the first four years after establishment of plantations and hoped that attitudes would change as soon as the trees came into bearing and income was derived.

241 [651] As noted on page 7, half the produce of the plantations was to belong to those who produced it and the other half to the government. But in practice in the Northern District, producers were required to deliver all produce to the government depots at Higaturu, Popondetta and Buna.(2) The half of the

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(1) P.A.R. 1926-7 : 53. A later magistrate followed a policy of "incessant talking to the village councillors ... for even if they do not think his [the magistrate's] advice worth following, they may be glad to take it as the only means of keeping him quiet" - P.A.R. 1933-4 : 29.

(2) The main depot was at Higaturu until 1941, but in that year new machinery was installed at Popondetta to handle pulping, drying and hulling. (Since 1933 the coffee had been shipped in the parchment stage to Port Moresby where it was hulled at the government rice factory). Before the Higaturu depot was closed, however, war broke out and all three depots were destroyed.

Production and income

433 While official reports give laziness or misunderstand-
241 ing as the reason for the lack of willing co-operation with the
scheme, the reason given today by the people themselves is that
the income was inadequate for the effort required.

Table 1 shows the total production of coffee from
plantations established under the ordinance in the Orokaiva area
for the ten year period 1931-40, and the amounts paid to pro-
[435] ducers for it. The price per pound has been calculated and
ranged from 4.5 pence (in 1932) at the highest to 2.1 pence (in
1938) at the lowest. The average price for the period was 2.6
pence per pound.(1)

433 Table 2 shows that output per acre of land planted in
coffee under the scheme averaged 681 pounds, which is a rela-
434 tively high yield. At 2.6 pence per pound this would have given
an income of £7.7.5 per acre. The total work force on all the
245 plantations is estimated to have been about 700, so payment
[465] would have averaged £1.11.0 per worker per year, or less than
2 pence per day worked. The 15½ acres of coffee in the Ongoho
block(2) would, assuming average yields, have given an annual
income of £114.5.0, or just over £1.0.0 per worker, but in-
formants today maintain that payment at Ongoho was usually 8/-
to 12/- per man per year with young lads being paid 5/-.
[464] Only on one or two occasions did the payout exceed £1. The
total labour force in the nine villages which participated in the
Ongoho block was probably close on 100 and yields per acre
465 were apparently lower than average. Enquiries at other com-
munal plantations show that higher prices were paid in places
where a smaller labour force was working an equally large
[466] area. In Hohota, for example, £6 to £9 was paid per man in
some years, but there the hours of work are said to have been
6 a.m. to noon six days a week, plus afternoon work at harvest-

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[439] (1) The world trade depression had begun about the time the first coffee was coming into full production. The crop was marketed in Australia where it met strong competition from Java coffee.

(2) Our measurement of the planted area shows it to have been just over 15½ acres, though the area gazetted was only 15 acres.

[TEXT CONTINUED ON PAGE 19]

Table 1

Production of coffee in the Orokaiva area from plantations established under the Native Plantations Ordinance for ten years 1931 - 40(1)

Year	1931	1932	1933	1934	1935	1936	1937	1938	1939	1940	Total	Yearly average
Weight (lbs)	9,630	22,652	67,470	60,645	61,425	123,000	127,000	171,595	187,300	163,319	994,036	99,404
Payout(2)	170	426	828	558	642	1,280	1,425	1,527	1,863	2,102	10,821	1,082
Pence per lb(3)	4.2	4.5	2.9	2.2	2.5	2.5	2.7	2.1	2.4	3.1		2 6

(1) Derived from Territory of Papua reports 1932 - 41.

(2) Net payment to producers in £ Australian.

(3) Calculated to the nearest tenth of a penny.

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435
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Table 2

Output per acre of coffee in the Orokaiva area from plantations established under the Native Plantations Ordinance for five years 1936 - 40(1)

Year	1936	1937	1938	1939	1940	Total	Yearly average
Acreage	189	218	242	242	242		226.6
Total output (lbs)	123,000	127,000	171,595	187,300	163,319	772,214	154,443
Output per acre (lbs)	651	582	709	774	675		681

(1) Derived from Territory of Papua reports 1936 - 41.
Acreages for the years 1931-5 are not available.

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245

465 466 ing time. Humphries (1944 : 3) estimates the annual payment per man to have ranged from a few shillings to £4 per year.

At that time some of the young single men were going out to work on plantations in return for food, accommodation and a cash wage of £6 per year. All plantations had to supply tobacco, soap, sugar and meat each week-end, and some paid wages every month (usually 10/-). But payment in cash and kind was not the only incentive to taking employment outside the [461] [885] district. Perhaps the main reason was the experience involved, for it seems to have become a necessary prerequisite to manhood that a youth should have been away to work. The income acquired was used at least partly to supply his bride-wealth on his return.

245 466 From discussions with many Orokaiva people who were involved in the plantations it seems that they regarded the scheme as an imposition whereby the people were required to plant coffee which the government commandeered and sold to its own profit. The annual cash payment was not viewed as a price per pound but as a token payment by government for their labour.(1) Official reports (e.g. P.A.R. 1933-4 : 27) noted that the people "complain loudly" when the payment was not up to expectations and in 1939 a demonstration occurred when the money paid out at Higaturu was thrown on the ground by the recipients.

245 [464] The plantations were undoubtedly overstaffed and workers should not have been under any strain to complete their tasks. With 700 workers for the 242 acres of coffee there was an average of nearly three workers to the acre, though allowance must be made for their having to carry the produce to the depot and in some cases to pulp it also. At Ongoho there were six to the acre, though walking to and from the job must have

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[461] (1) It is still quite widely held that produce prices are fixed by government, and that in the same way as Europeans are paid higher wages, they receive higher prices for their coffee. Humphries (1944 : 2) noted that the people regarded "working for the government" on native plantations as much less remunerative than working for a planter.

taken as much time as the work itself for some of them.(1) 245

Under ideal conditions each worker could probably have handled one to two acres working mornings only. Such, however, was the government's enthusiasm for instilling regular work habits (or at least regular attendance at the place of work) that no roster system seems to have been worked out to ensure that workers attended for the minimum time necessary to complete their tasks. It is not difficult to understand that, though fear of imprisonment kept the project going, there was little enthusiasm for it in the villages. [466] [461]

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(1) Girigirita and Oere were about an hour's walk each way from the coffee block.

Post-war community plantations (1945 - 62)

177 Shortly after the outbreak of war with Japan, government services were reduced to a minimum, coffee buying ceased 657 and the community cash crop gardens were soon abandoned. [241] The Orokaiva area became the scene of intense fighting between Japanese and Australian-American Forces during 1942 and 1943 and civilian government was not restored until 1945. No further Commissioners for Native Plantations were ever appointed but towards the end of 1944 an Agriculture Officer (Mr. F. Shaw) was posted to Higaturu. One of his tasks was to [461] get the pre-war plantations into production again. Most informants today say they had no wish to resume work on the plantations owing to the low payments made pre-war, which they assumed would continue. Their association with Amercian forces had led them to consider their labour to be worth con- [466] siderably more than pre-war rates. However the military administration (A. N. G. A. U.) was then still in charge of the Territory, and they were instructed to recommence work on the plantations.

The pre-war system whereby every man worked on 245 the coffee each morning from Monday to Friday was resumed, 466 though supervision was transferred from the village constable to a "coffee boss", one of whom was appointed by the government to oversee each plantation.

Penal sanctions were less severe than pre-war, the usual punishment for failure to attend work being one month's imprisonment instead of three, but before long the sanctions 465 were relaxed and few people were convicted. Income was [434] higher, for whereas before the war the villagers were paid only half of the proceeds of the crop, after the war they were paid the full price.(1) Ongoho people inform us that annual payouts after the war were £6 to £9 per man per year, and in addition

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(1) The Native Plantations (Papua) Ordinance of 1952 provided for the total value of the crop to be paid in cash to the producers. In practice, the policy had been followed for several years before that.

Table 3

Coffee production in Papua 1939-63(1)

1938-39	112	tons	(Of which 84 tons came from Orokaiva native plantations)
1939-40	77	tons	(Marketing and supervision affected by war)
1940-41	69	tons	(Marketing and supervision affected by war)
1941-42	Nil		(Japanese occupation)
1942-43	Nil		(Japanese occupation)
1943-44	1	ton	(Australian military occupation)
1944-45	6	tons	(First attempt to revive scheme)
1945-46	20	tons	(First attempt to revive scheme)
1946-47	21	tons	(First attempt to revive scheme)
1947-48	12	tons	
1948-49	19	tons	
1949-50	24	tons	(Second attempt to revive scheme)
1950-51	13	cwt.	(Owing to Mt. Lamington eruption)
1951-52	½	ton	(Owing to Mt. Lamington eruption)
1952-53	1½	tons	(Owing to Mt. Lamington eruption)
1953-54	2½	tons	
1954-55	4	tons	(Third attempt to revive scheme)
1955-56	5	tons	(Third attempt to revive scheme)
1956-57	11	tons	
1957-58	7	tons	
1958-59	17	tons	(Includes first exports of coffee from individual plots sponsored by agricultural extension on land registered under Higaturu Council land registration scheme)
1959-60	24½	tons	(Including 7 tons from indigenous producers in Northern District)
1960-61	30	tons	(Including 24½ tons from indigenous producers in Northern District)
1961-62	35	tons	(Including 26 tons from indigenous producers in Northern District)
1962-63	49(?)	tons	(Including 41 tons from indigenous producers in Northern District)

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(1) These figures had to be derived from a variety of sources, for the Annual Reports for Papua do not include exports made via Lae in New Guinea. They must be taken as approximate only.

After 1958 most of the coffee produced by indigenous 245
growers in the Northern District came from plots which were 423
planted by individuals (largely as a result of agricultural ex-
tension services) and registered under the Higaturu Local
Government Council land registration scheme. The communal
project was formally abandoned in 1960 with the repeal of the
Native Plantations Ordinance.(1) Crown lands reverted to the
Crown and native lands to their owners. The Government has
treated the Crown lands as reserves for the local people and
has not taken any action to restrict their use as communal plan-
tations. Today, however, only 9 of the 16 pre-war plantations 433
which we visited are producing at all, and they at only a fraction
of their potential output.

We traced the history of the Ongoho community block 578
in detail in a series of separate interviews at each of the [124]
villages which had participated in the project.(2) The collapse
of the project there was caused by disagreement over land
rights, apportionment of work and distribution of income. The [614]
disputing parties were the various sub-clans which had partici-
pated in the project. The sub-clans may be roughly equated
with villages.(3)

Before the war, strict control by the Administration 657
precluded the emergence of these particular problems: the land 245
had been demarcated and the trees planted under close super-
vision, fixed patterns of work were imposed, and the money was
paid to each man by a government official. By the late 1940's
however, the sanctions for failure to work were not in fact being
exercised, and attendance was irregular. The Ongoho "coffee 245
boss" who had been responsible for local supervision from
about 1945 found the dissension too much to control and re-
signed in 1948. Little work was being done and the govern-

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(1) The Native Plantations (Papua) Repeal Ordinance 1960.

(2) This was necessary because the issue is still very contentious and feelings about the disputes over the community gardens are still strong.

(3) In fact each village is regarded as being that of a particular sub-clan, despite the [621]
existence of smaller enclaves of other sub-clans in most of them. Marriage is usually
(but not exclusively) between sub-clans and almost invariably within the Asigi tribal [582]
group.

245 ment coffee pulping machine was withdrawn. Supervision of
the coffee was taken over by the village constable (who had been
in charge of the coffee before the war) but no records of
attendance were kept. Later, at the constable's suggestion, a
Patrol Officer is said to have appointed one Haruma (who is a
classificatory brother of the constable's wife) as coffee boss.
This must have been an unofficial appointment as he was not
[578] paid. There was by this time a continuing dispute about the
distribution of income from the coffee.

The Hoiwo'undi sub-clan, on whose land the Ongoho
578 coffee was planted, claimed a larger share of the proceeds
423 because the land was "theirs". As no agreement was reached,
the Hoiwo'undi forbade members of other sub-clans to enter the
614 coffee gardens. This prohibition was respected even though
many people felt it to have been unjust. Legally of course
neither Hoiwo'undi nor any other sub-clan had any right to the
land, because the whole garden area had been purchased by the
Crown in 1922 and set aside as a reserve for the purpose of a
native plantation in 1923. But security of tenure is dependent
much more on beliefs than it is on law and in fact the people do
not concede the government's right to the land. All are agreed
that it is Hoiwo'undi land, though the other sub-clans consider
that as everybody cleared the bush and planted the trees, it is
unjust that Hoiwo'undi should have denied them access. Nobody,
[241] however, seems to deny their right to do so. In fact
Hoiwo'undi people had been using the front part of the area for
a food garden before the community coffee plantation was established.
One family of Akute'undi sub-clan had also been
gardening there with the approval of Hoiwo'undi. The coffee
boss (Haruma) was also the leader of the Hoiwo'undi sub-clan.

245 For a time the community garden was abandoned
altogether, but later some Hoiwo'undi people harvested coffee
there spasmodically. The income was shared within Hoiwo'undi.
No weeding, pruning or other maintenance work was carried
731 out at this period. At the time of the Mt. Lamington eruption
in 1951 all work ceased. The government coffee factory and
241 buying centre was destroyed and so were several of the community
plantations.(1) Due to the trauma caused by the disaster

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(1) In fact the coffee trees grew again from seed which had been lying in the ground and which was not affected by the eruption. These self-sown trees have not been tended or thinned, however, and their productive potential today seems to be very low.

and a lack of buying facilities, no coffee was picked at Ongoho 241
until 1952. [731]

In that year a local company (R.F. Bunting & Co. Ltd.) began buying coffee. The market price was higher than it had been when the government was buying (i.e. up to 1951) and it continued to increase. Some Hoiwo'undi resumed harvesting coffee from the Ongoho community block, but there was constant [578] tension between them and the other sub-clans, Akute'undi in particular. Only a little of the coffee was picked, most of it by the village constable and the coffee boss and their close kin.(1) In 1953 they took two sacks of coffee to the Department of Agriculture in order to buy a coffee pulping machine worth £21.0.0. [258] The machine did not function properly and after several years a passing Patrol Officer took it to Popondetta for repair. The Patrol Officer was later transferred and the machine was never located again. The owners still harbour a grievance on this account.

Agricultural extension services in the district were 654
expanded during 1955-6 at the same time as the Higaturu Local 245
Government Council was being formed. (The council area embraces all except one of the community plantations). Although agricultural policy at that time was to encourage future planting by individuals rather than groups, efforts were made to increase production from existing community plantations. Extension workers visited every community plantation and wherever possible enlisted local co-operation to have undergrowth cleared and trees pruned. Not all the people at Ongoho 245
worked, but factional differences were sufficiently contained for 578
several sub-clans to work together under the supervision of
extension workers. Once the major task was completed and the [654]

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(1) The village constable was a member of Akute'undi sub-clan but was married to the most senior woman of Hoiwo'undi sub-clan. She has a very forceful personality, is married within her own village and is the only member of her family to have borne children. They will therefore acquire some land rights from her. The land on which [425] the community coffee is planted was previously used for gardening by her father and her brothers. Her husband was village constable and he and his lineage pick coffee, but other lineages of his sub-clan do not and he is as forceful as his wife in denying their right to do so. In fact the constable and the coffee boss (who is a classificatory brother of the constable's wife) seem to have co-operated throughout to maximise their joint advantage.

extension staff left, the internal tensions re-asserted them- 245
selves. [578]

[654]
The people made an attempt to keep the garden work-
ing as the price of coffee was then 3/3 per pound. Persons [435]
from several sub-clans participated in harvesting, pulping and
drying and a consignment of coffee was taken on foot to Popon-
detta (a distance of about seventeen miles each way by the paths
then in use). For the first time women and children helped [462]
with the harvesting. The income from sales was distributed by
the coffee boss, but disputes arose over the proportions due to [464]
the "landowners" for the use of the land and to the coffee boss [578]
for his supervision, as well as the relative shares to be given
to those who had done the work, for some had not worked as
many days as others. Members of other sub-clans again with-
drew from the project. The coffee boss himself and some [433]
members of Hoiwo'undi sub-clan occasionally harvested a little
coffee to provide money for particular needs, but most of it was [434]
left untouched. No further maintenance was done. When the
Higaturu Council and its supervising officer, Mr. Normoyle,
strongly advocated planting by individuals rather than groups, a
number of people took seeds from the community garden and
established their own individual coffee plots.

When the Higaturu Council erected a coffee factory in
Popondetta late in 1959, councillors were encouraged to maxi-
mise coffee production in their areas. The Ongoho councillor
(who is a half-brother of the ex-village constable)[1] was able
to persuade some people to start harvesting again. On this
occasion each family was to be allowed to harvest, process and
sell whatever coffee its members picked.[2] People were to be
allowed to pick anywhere and at any time. No maintenance
was done except on one occasion at the beginning when all
people worked together to clear the undergrowth. This system [578]

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[1] When the council was formed all village constables were compulsorily retired. [625]

[2] The produce was still taken to Popondetta on foot. The Higaturu Council provided a tractor and trailer to collect coffee from various points along the main Saiho-Popondetta road, but Ongoho was about eight miles from the nearest point. As a flat rate of one penny per pound was charged for the service, the Ongoho people did not use it. They used to leave Ongoho at dusk and carry all night and arrive at the factory early the following morning. [489]

245 [578] operated for several months but broke down when the Hoiwo'undi, who felt that they were entitled as landowners to some extra share of the proceeds, again forbade members of other sub-clans to enter the coffee garden.

Since that time only the coffee boss and his family have ever picked the coffee, and they only occasionally. No maintenance has been carried out for some years. The Hoiwo'undi people say they would like to take full control of the block and divide it into individual plots - one for each of the six men in the sub-clan. They would be prepared to grant a portion of the block to the related Akute'undi of Ongoho village who were planting food crops on some of the land at the time the
578 coffee project was started. Some Akute'undi claim that the land is, in fact, theirs exclusively. The other sub-clans want separate and equal divisions for each of the participating sub-clans, arguing that all cleared and planted the coffee. It is unlikely that agreement will be reached.

121 We subsequently paid brief visits to sixteen other plantations which had been gazetted pre-war to determine the nature of the problems which had led to their abandonment. As time did not permit of detailed investigations, we regard the results as indicative rather than definitive. Details of the situation are set out in Appendix A. [A]

A. [See Category 423, pp. 37-40--Analyst]

likely to emerge. Problems of work organization and income 241
distribution may nevertheless arise.(1) 614

Problems of work organization: The communal plantations almost all involved several unrelated descent groups
which traditionally recognized no single leader. The Orokaiva [726]
did occasionally form larger ad hoc groups for warfare and
sometimes for forest clearing, but these were temporary associations directed to the achievement of a short term goal. This of itself does not preclude the formation of new and larger groupings with unitary leadership provided there is either a strong desire for group action (and the necessary institutions to direct it), or strong external sanctions to enforce it.

The earliest communal plantings of coconuts and 245
rubber by the Orokaiva were carried out under instructions 249
from officials and sufficient pressure was exerted to ensure
compliance. The pressure was not, however, maintained and 657
the coconut and rubber trees were little cared for after planting. 466
Nor was harvesting for market enforced. Prices were low; the coconuts were seldom made into copra and the rubber was never tapped until the time of the war.(2)

The working of the coffee planted under the Native 245
Plantations Ordinance was strictly supervised. A village con-
stable was in charge of each local group, the European officer 657
in charge patrolled the area regularly, and defaulters were 466
severely punished. The communities regarded the whole
operation as one of oppression by the government. During the [626]
period that government sanctions were reduced and finally withdrawn, coffee prices were high (more than ten times higher
than immediately pre-war). Many people therefore wished to [461]
continue working the coffee gardens, but the community was not
traditionally equipped with adequate sanctions to ensure that [626]
individuals did their share of work, and the law specifically forbade the exercise of sanctions by any indigenous individual or group.

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(1) Since writing this we have been informed of a small (3 acre) communal tobacco-growing project which began at Soroputa in 1948 on the land of a single descent group. [249]
It was reported to have functioned efficiently until it was destroyed by the Mt. [731]
Lamington eruption in 1951.

(2) For details of the war-time rubber-tapping scheme see Rimoldi, 1964.

agricultural techniques of cash cropping and to regular patterns 241
of work. It is true that most of the individual plantings of [245]
coffee since 1956 were made with seeds taken from the old community blocks where the techniques of coffee husbandry had been learned, but it was there also that the people had acquired their distaste for cash cropping.

The fact that all attempts at developing communal 121
cash cropping among the Orokaiva have failed does not necessarily mean that communal planting is never practicable. What [241]
it does indicate however, is that to be successful, communal farming like any other farming system, must be coupled with appropriate organizational structures, sanctions and incentives as well as with extension, processing and marketing facilities.(1)

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(1) Individual small-holdings do not of themselves lead to higher output. Since [433]
1956, the nine Asigi villages which participated in the Ongoho community block have been encouraged to plant individual cash crop gardens. To date only 33 gardens have [245]
been planted (all of coffee). They cover only about 9 acres of land and contain 4,209 trees. Most are little better tended than the community block and fifteen are completely abandoned. Low price, distance to the market and lack of extension services seem to be responsible.

Appendix "A"

Plantations established in the Northern District on Crown land under the Native Plantations Ordinance

Official No.	Location	Area a.r.p.	Crop	Villages participating	Sub-clans	Present use	User	Reasons given for stoppage(1)
5	Bowera (Ioma))	These four plantations were never operated. They were cancelled in 1932.						
6	Tabara (Ioma))							
7	Wadi (Ioma))							
8	Poho (Ioma))							
15	Sasembata	10.0.0		(Not visited)				
16	Garombi	10.0.0		(Not visited)				
17	Isivita (Peseteambari)	10.0.0		(Not visited)				
18	Isivita (Koropata)	10.0.0	Rubber	Koropata Kiorota Egaturu Tambore	) Berikipa)) Oitopa)	Still being tapped	Owners of individual trees	------
19	Wasida	10.0.0		(Not visited)				

(1) Reasons given by the villagers. In places where only brief visits were made these may be incomplete.

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245

Official No.	Location	Area	Crop	Villages participating	Sub-clans	Present use	User	Reasons given for stoppage
20	Huvivi (New Mongi)	20. 3. 8	Coffee	Huvivi Hingoturu Onjahambo Ahamba Koganata	} Sokepa) Honinapa	Slight		
21	Mongi (Hangeriterari)	20. 0. 0	Coffee	Mongi Pengipejari Baiwaturu Oteindarituru	) Unjekapa) Darahopa) Koreapa) Akeopa	Nil	-	
22	Soputa (1)	20. 0. 0	Coffee	Soputa Hinhota	(Paratapa, Kovenopa (Wasiripa Asinapa, Humotapa, Soupa, Asepa, Pangaripa, Tigasepa, Angorapa	Nil	-	Dispute over land rights
23	Sombo (Sangara)	15. 1. 30	Coffee	Sombo No. 1 & 2 Egaturu, Tunana, Seondeturu, Hangeturu, Sehamo, Huisata	) Horeopa, Embupa,) Pangaripa, Sorupa,) Homberepa, Heurapa,) Heregapa, Dihumapa,) Horipa, Besupa,) Hirikipa, Hatopa,) Okaipa, Sivavapa,) Houngapa, Umbahapa,) Anetapa, Kogorapa	Slight	Any Sombo people not killed in eruption	Destroyed by Mt. Lamington. Individual plots planted before community plot rejuvenated

(1) Location later changed from Crown land to Native land.

Official No.	Location	Area	Crop	Villages participating	Sub-clans	Present use	User	Reasons given for stoppage
24	Imanituru (Old Higaturu)	30.0.0		(Not visited)				
25	Andemba	22.2.0	Coffee	Andemba, Kewana, Kuruta, Opapata, Hamuni, Ogapoegarota, Hamumuta	) Horeopa, Huaepa,) Heregapa, Sindapa,) Pakuhopa, Jujapa,) Waraupa, Punahopa,) Suarapa, Haujepa,) Noerapa	Slight	Any Andemba people not killed in eruption	Destroyed by Mt. Lamington Individual plots planted before community plot rejuvenated
26	Ambogo	22.2.0	Coffee	Ambogo Amonekirota Haeraturu Ojahirita Ambohu	(Komotepa, Serigepa, (Hurepa, Oripa, Moinapa, (Sigorepa, Hinjopa Sohopa, Hatopa, Sehopa Sehopa Haujepa Embatipa	Slight		Partly destroyed by Mt. Lamington
27	Hamburata (Huhurundi)	20.2.0	Oil palm then coffee	Hamburata .... Haugata ...... Kukumbata .... Juhata .... Seoro	(Herepa, Boutepa, (Iohipa, Ombarapa, (Seharipa, Oripa, (Barumapa, Bakopa, (Berchobari, Irinapa, (Ingikipa (Atupa, Bangaripa, (Embesepa, Haunapa (Oretapa, Huhurupa, (Hauro, Heregapa, (Pakopa (Sindapa, Hihinepa, (Jiregapa, Aukapa (Huepa, Akutepa, (Oisopa, Jega	Nil	-	Price inadequate - coffee trees later destroyed by flood

Official No.	Location	Area	Crop	Villages participating	Sub-clans	Present use	User	Reasons given for stoppage
28	Ahora [1] (Huhurundi)	20. 0. 0	Cocoa then coffee	Ahora Arova Omba	Hurupa Gambe Gambe	Nil	-	Price inadequate
29	Kanari	12. 0. 0	Coffee	Kanari, Ajase, Iwori, Waru, Jajau		Nil	-	Dispute over land rights
30	Ongoho	15. 0. 0	Coffee	Ongoho, Sotokoiari, Ivisusu, Hongorata, Ondahari, Oere, Girigirita	Akute'undi, Pomoni'undi, Hoiwo'undi, Sahuru'undi, Kajumba'undi, Hature'undi, Urumo, Baruna	Slight	1 family (ex coffee boss)	Disputes over land rights, income distribution and work sharing
		270. 2. 38						

(1) Rescinded 2. 12. 1929, but land legally remained as Crown land.

The above plantations were all gazetted on 7. 2. 1923, but an addition of 4 acres (making 20 acres 3 roods 8 perches in total) was made to Plantation No. 20 on 6. 2. 1929.

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Appendix "B"

Plantations established in the Northern District on Native Land under the Native Plantations Ordinance (1)

Official No.	Location	Year established	Area	Crop	Villages participating	Sub-clans	Present use	User	Reasons given for stoppage
75	Doboduru (Beuru-Perombata)	1925) 1929)	12.0.0	Coffee	(Not visited)				
76	Kakendeta	1925	9.0.0	Coffee	(Not visited)				
77	Haugata (Hamburata)	1925	12.2.0	Coffee	(Not visited)				
78	Eruatutu	1925	31.0.0		(Not visited)				
104	Kiorota-Hohota (Meamburari)	1929	15.0.0	Coffee	Hohota, Kiorata	Jau'undi, Havarihaha, Kaguhaha, Andirihaha, Suaru-undi	Slight	Former landowners	Dispute over work organization and income distribution

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(1) These are in addition to the lands listed in Appendix A, which covered those acquired by the Crown and set aside as Native Reserves. Plantation No. 22 (Soputa) was transferred from Crown land to Native land in 1930 - see Appendix A.

Official No.	Location	Year established	Area	Crop	Villages participating	Sub-clans	Present use	User	Reasons given for stoppage
105	Hegata-Pendereta (Hururu)	1929	9.0.0	Coffee	Hegata Penderata Puhemo	(Bevehupa, Baratapa, (Eherapa, Okaipa, (Endehipa, Waraupa, (Angoropa Sesengipa Ribunipa, Gasipa, Horiwapa	Still Picking	2 Hegata men (the former landowner and one other)	Still working. The non-owner gives the land-owner a share of proceeds from sales.
106	Banguho Creek (Perombahambo)	1929	12.0.0		(Not visited)				
110	Tunana	1934	9.0.0	Coffee			Slight		Damaged by Mt. Lamington
111	Beuru	1934	8.0.0	Coffee	(Not visited)		Slight		Damaged by Mt. Lamington
112	Hegau (Kanari-Jajau)	1936	6.2.0	Coffee			Nil	-	Dispute over land rights
113	Heherita (Kogonata)	1936	4.0.0	Coffee	Girigirita, Epa, Heherita	Pomoni'undi, Jahaki'undi, Urumo	Nil	-	Not resumed after Mt. Lamington eruption. No reason given
			128.0.0						

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Appendix "C"

A sample of community plantations established in the Northern District of Papua since 1947 (not related to the Native Plantations Ordinance)

Location	Year started	Area (approx.)	Crop	Villages participating	Sub-clans	Present use and user	Reasons for stoppage
Hojavasusu			Coffee (originally cocoa)	Hojavasusu	Seho, Uhoru Ererehaije, Hoihane, Kindarahaije	Sub-divided about 1956 into individual plots. (Well kept. Land belongs to Seho sub-clan but no dispute over use by individuals of all clans).	Not stopped. (Use rights confirmed by registration with Higaturu Council)
Ajeka			Cocoa	Ajeka		Spasmodic, mainly by landowners	Dispute over land rights
Sivepe	1956	1½ acres	Coffee	Sivepe	Jegase, Seho, Timumu	Divided into individual plots in 1958.	(Registration with Higaturu Council applied for)
Gewoto	1947	3 acres	Coffee	Garara	Somboba, Ijipa, Undaripa and 2 others	Nil	Dispute over land rights

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Appendix D

Native Regulation No. 121(1)
(Providing for compulsory planting of economic trees)

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Coconuts and other useful trees and plants

(1) It is a good thing to plant coconuts and other useful fruits and trees, and all coconuts and trees planted under this regulation shall belong to the person that plants them and to his heirs, and every able-bodied man shall from time to time plant coconuts and other useful trees and plants. The Magistrate shall fix the number of trees or the area of land as the case may be that the able-bodied men of each district or village shall plant, and coconuts shall be properly planted at a distance not less than five fathoms from tree to tree.

(2) All men will not have to plant the same number of coconuts and other useful trees, on the same area of land because some men have little land and some have much and some places are not good for planting trees.

(3) It shall be the duty of the village constable to see that this regulation is obeyed in such villages as the Magistrate directs, and if he fails or neglects to do so he shall on conviction be liable to a fine not exceeding Two shillings and sixpence or in default of payment to imprisonment for any period not exceeding Seven days, or to imprisonment in the first instance for any period not exceeding Seven days.

(4) The Magistrate shall also, where deemed desirable, order the people to plant and cultivate useful food trees along the village road so that they may all enjoy the shade and eat of the fruit.

(5) The Government may provide the people from time to time with young trees or seeds to plant, and the Magistrate will direct the people where to plant them.

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(1) Native Regulation Ordinance 1908-30.

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(6) If any native who has been ordered to plant and cultivate a certain number of trees or a certain area of land by the Magistrate wilfully neglects or refuses to do so he shall on conviction for a first offence be liable to a fine not exceeding Five shillings or in default of payment to imprisonment for any period not exceeding Six weeks, or to such imprisonment in the first instance; or, for a second or any subsequent offence to imprisonment in the first instance for any period not exceeding Three months.

Sub-clauses (7) to (9) cover minor points of detail and have been omitted.

This regulation was amended in 1946 such that planting could be forced thereafter only in the event of serious food shortages.

Appendix F

The Orokaiva villager's experience of cash cropping

241 177 [114] While the writer was conducting research into communal plantations in some villages, an assistant, Mr. Edric Eupu, visited others. The following brief extracts from two of his preliminary reports indicate the natuve of the villager's experience of cash cropping, and help to explain the current lack of enthusiasm on the part of many Orokaiva for further experiments.

Ahora Communal Garden

Before the war there were four cash crops planted at Ahora: coconut, cotton, cocoa and coffee. The coconut was planted on two clans' land. The names of the two clans were Huruba and Gambe. There were three villages took part in the work. The names of the villages and clans who took part in the work were ....

245 [258] 248 465 They planted coconuts but did not make any copra. [There was no market for it at the time]. The coconut was ready to make copra, but the Government officer at Buna told the people to plant the cotton. The cotton was planted on Gambe clan's land ..... The people worked one year for the cotton without pay .... When the cotton was ready .... they picked it and took it to Buna (government station) .... and they got paid. The pay was 1/- for each man in the three villages for the work they had done for the cotton. After they got the pay the work on the cotton stopped.

245 [465] [133] Then government told the villagers to plant the cocoa and they planted. It was planted on Gambe clan's land. The cocoa bore and they took the pods to Buna. Government paid for the pods [but the pay was insufficient] .... Then the coffee was planted on Huruba clan's land .... The people used to work every day .... The pay for the coffee was about 5/- to every man each year. While they were still doing this the war came. After that they did not work until Mt. Lamington erupted.

Hamburata Communal Garden

Before the war there were four cash crops planted at Hamburata: rice, coconut, palm oil and coffee. The rice was planted on Atupa clan's land. Five villages took part in the work .... There were 29 clans .... The villagers worked for the rice for one year without any pay. The rice was harvested in bags .... The people brought the bags of rice to Buna but the government did not pay them for the work they did on the rice. They worked for the rice for one year only .... 241 [465] [243]

The second crop planted at Hamburata was coconut. The coconut was planted on land of Atupa clan .... The coconut plants were still young when the villagers were told by the government to plant another crop. The crop was palm oil .... The palms were planted on Haumepa clan's land. The villagers planted the oil palm and looked after them for one year and the government told the people to plant another crop. The other crop was coffee. [249]

The coffee was planted on Seharipa clan's land .... They worked every day .... They got pay once in every year. The government officers used to come to the village. The government used to send police to the village to look after the people to work on the coffee .... When the war was near the government did not send the police to the village for this work. After that all the people in the village stopped work .... After the war they did not work on the plantation until the Mt Lamington eruption. The coffee was near the Ambogo river so the river was flooded and washed the plantation away .... 245 [625] [133]

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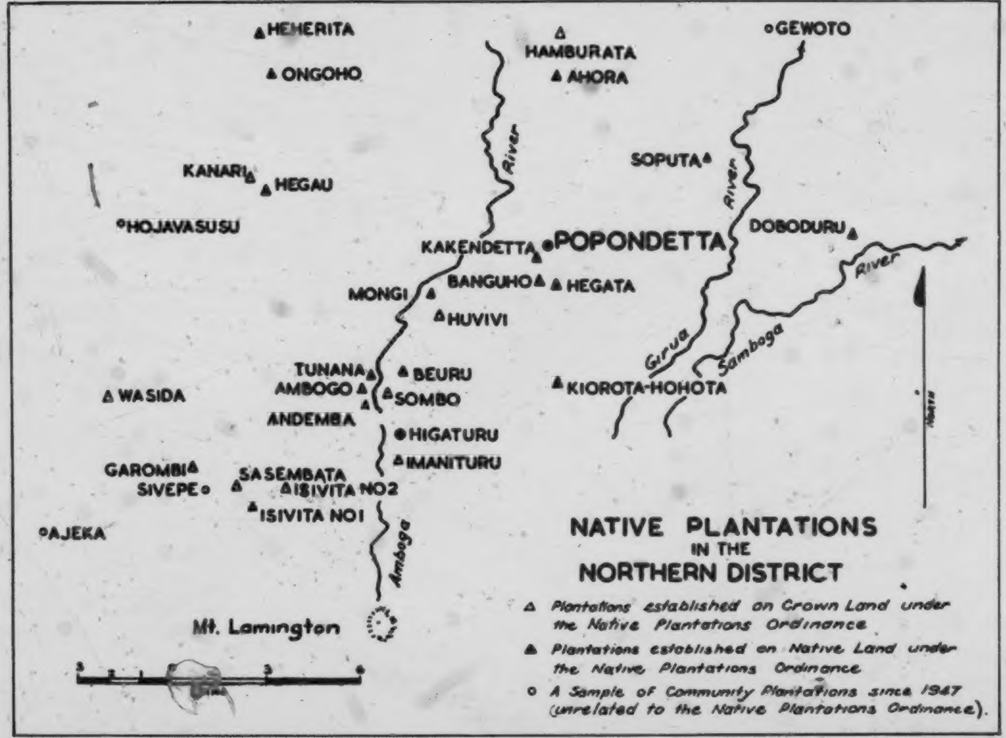

NATIVE PLANTATIONS IN THE NORTHERN DISTRICT

HEHERITA
ONGOHO
HAMBURATA
AHORA
GEWOTO
River
SOPUTA
River
KANARI
HEGAU
HOJAVASUSU
KAKENDETTA
POPONDETTA
DOBODURU
BANGUHO
HEGATA
River
MONGI
HUVIVI
Girua
Samboga
TUNANA
BEURU
AMBOGO
SOMBO
KIOROTA-HOHOTA
WASIDA
ANDEMBA
HIGATURU
IMANITURU
GAROMBI
SASEMBATA
SIVEPE
ISIVITA NO2
ISIVITA NO1
AJEKA
Amboga
Mt. Lamington
3 2 1 0 3 6
North
△ Plantations established on Crown Land under the Native Plantations Ordinance
▲ Plantations established on Native Land under the Native Plantations Ordinance
○ A Sample of Community Plantations since 1947 (unrelated to the Native Plantations Ordinance).

[end map]

231 some toll on growth rates, size and length of life. Sows are quite prolific, however, and litters of 6 to 10 piglets which survive weaning are common. Boars are not numerous but it is claimed that the owner charges no fee for their services.

It is doubtful whether improved breeding and husbandry could
[431] in themselves induce a significant increase in the consumption of
meat by pig owners. Pigs are too scarce in this area to meet the
existing demand and priority is given to the use of pigs for
[435] distribution as pork at feasts or for gift exchanges. Very often
neither a man nor his close kin have a suitable pig available
when needed and in one such instance a price of £20 was set by
the owner of a pig in another village.

Any person who aimed to establish a herd of significant numbers for commercial purposes would probably need to divorce himself as a participant from the network of exchanges which involve pigs.

245 e. Economic trees

Although the village is 23 miles from Gona on the coast and
[131] over 1,000 ft above sea level, most economic trees are abundant.
The average household claimed 62 trees from which crops are
[133] gathered in season.[1] In order of numerical importance these were
coconut, breadfruit, areca (betel) nut, sago, pandanus and *tauga*-
nut (*Cycas media*) trees. Each household also owned one or two
citrus, *puga*-nut (*Terminalia okaria*), mango or barkcloth trees.
[137] Sago does not grow wild in this area as it does on more low-lying
land, but numerous small creeks provide sites suitable for planting. The 93 sago trees owned by Jegase and Timumu people are sufficient to meet the intermittent demand for sago for distribution at large gatherings or during the occasional period when there are limited amounts of the more common crops ready to be harvested from the village's gardens. Whenever a tree is harvested the owner is expected to share the sago widely with the other villagers whether they are his agnates or not.

Most villagers had lived in several villages, some of which
are now abandoned, and had planted coconuts there which they still
claim. They usually had similar numbers scattered over parcels
of land where they had gardened in the past. Sixty-two per cent
of all trees had been planted on the patrimonial land of the
[428] person claiming the trees. A man often plants trees while gardening on the land of affines or matrilateral kin and these trees
are inherited by the planter's son.

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[1] These claims were not thoroughly investigated but their accuracy was checked on a number of sample parcels where householders claimed a specific number of trees of various kinds.

423 It is customary for a man to plant a few trees on his own land for his sister's children for their later use. [245] Women sometimes acquire trees of their own in this way but unless a woman is the sole surviving member of the agnatic group in which are vested [428] the rights to the land carrying economic trees which she uses, she acquires no rights to specific trees from her father. After marriage she has only limited access to her patrikin's trees whose produce she previously shared. One householder stated [685] that he would not expect his sister to ask for produce from his trees because her husband should have enough of his own. Another once lodged a formal complaint with the Department of District Administration staff against his sister's husband who had come from another village to harvest one of his trees without first seeking his permission.

These restrictions do not apply to a widow who has returned to the village as a dependent on her father's kin; nor do they apply to a married woman if the trees in question were planted by her husband while gardening on the land of her group.

428 Economic trees are ideally inherited patrilineally in the same way as the land of the planter (see p.38).[A] Sometimes a man inherits trees from his father, usually in an area some distance from where he lives, without retaining proprietary rights to his father's land where the trees stand. The heir then needs to seek permission for access to the trees which he may have been allowed [423] to retain by the deceased's co-resident kin who inherited the land. On the other hand, an individual may receive as a gift (from a distantly related kinsman) continuous rights to trees on land which he knows will be inherited by the donor's patrilineal descendants. In each of these ways rights to trees are transmitted from the planter to another person who does not receive the planter's land.

We noted one case where an individual seems to have reinforced a claim to inherit particular parcels of the land which he hoped he would share with another heir, by planting permanent trees there while gardening. The trees bore witness to the fact that these particular gardening areas had long been identified with him.

425 A man may periodically visit a distant area where he claims proprietary rights to land which he has not gardened for some time and harvest tree crops, or perhaps hunt there, and thereby reassert his claim to the land, but this mechanism is doubtless inadequate unless a close kinsman permanently resident there is willing to represent his interests at other times.

423 On special festive occasions a localized patrilineal group has
614 some call on the produce of the trees or even of garden produce of residents of other villages who are either closely related

[A] [See Category 428, p. 38--Analyst]

464 166 [469 The older men in the sample were restricted in employment opportunities to indentured labour usually outside the Northern District. The young men on the other hand readily leave village life temporarily to take casual work on European plantations in the district where there is now a greater demand for labour. They may leave their wives and children to be provided for in the meantime by the other side of the family or may have them accompany them to the area where they are employed. These absences interrupt the routine of subsistence activities for the family but the possibility of this course of action is left open by local environmental conditions and the virtual independence of the nuclear family as a gardening unit. There is little seasonal variability and this small group is free to resume any phase of garden activities when and where it chooses.

431 Among the 5 able-bodied and active men of the senior group there seems to be no consistent demand for cash which cannot be met by gifts from their kin or affines and they have sought temporary employment only as a means of meeting some immediate financial requirements. With the exception of the salaried local government councillor the older men received 78 per cent of their total year's income of $88 as gifts.

434 454 By taking employment more frequently the younger men acquire income which they gradually spend on the range of consumer goods available locally as well as on kinship obligations. However, not all income is spent in this way and, as Belshaw found in this area (1951:11) there is both some capital available for investment and a willingness to contribute money to funds for this purpose if they can be organized.

The men who have spent most years in paid employment also supplement their income by producing rubber and coffee, sometimes with the assistance of their fathers. However, no one has invested heavily in these crops and they provided only $52 or 15.8 per cent of the sample's income for the year.

● 245 c. Commercial agriculture

(i) Coffee. Four householders in the sample have individual coffee plots with a total of 503[1] trees on 1 acre of land. One of these plots is a section of a former village or 'company' coffee plot. About the time of the opening of the Higaturu Council in 1956 members of Jegase, Timumu and other groups in Sivepe and Binduta villages participated in the planting of 2 'company'

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[1] The agricultural census of 1964 recorded 1,100 trees held by 5 growers in Sivepe as a whole (162 were not yet 6 years old and 491 of the trees had been planted more than 10 years before).

●245 coffee gardens.[1] About 320 trees were planted on the Sivepe plot. It was not government policy to encourage community gardens, but those who made the garden were under the impression that this was the wish of the officer who suggested that the people in the villages plant coffee.

Clearing of this 'company' garden was carried out jointly by members of all Sivepe clan branches. A part of the land they used belonged to a Timumu lineage and the rest to a Jegase lineage. [654] While the trees were maturing an agricultural extension patrol told them to stop working the gardens jointly and to make new individual gardens. In 1957 a Cadet Patrol Officer gave the same advice explaining that disputes would otherwise occur about the distribution of income from coffee sales.

[613] It was decided to divide the Sivepe coffee along pre-existing lineage boundaries; one part was taken by a man of Hajejopa lineage of Timumu clan, the other by a Seho man (e3S) who is the husband of the only surviving member of the Jegase lineage, Sesewopa. Even after this had been done these men claim to have shared the small amount of money from the first sales with the other planters.

Since the division the Timumu man has indicated that he claims the land as far as a creek which formed the outer boundary of the village plot on the Seho man's side, i.e., that he believes all the coffee was planted on his land. Even though the Seho man applied in 1960 to have his section on his wife's land registered with the Higaturu Council, he now intends to give it to the Timumu man and to plant new coffee on his own land.

The other 3 gardens were planted on a household basis in 1957.

Two men from other clans have planted coffee on the land of Jegase men in Sivepe. One garden was made about 5 years ago by a Seho man from Sivepe (e4S) on the land to which his father had planting rights. The land had earlier been held by a man who was the wife's brother and sister's husband of the present planter's father. The holder of the residual rights passed them to his classificatory sister's son from Berekipa lineage who some years ago used the Seho man's land for subsistence gardens.

The other garden is on the land of a Bebehupa man and was made by his father's sister's son, an Usohu man from Binduta. The Usohu man was given rights to plant sago and coffee because he had been named after the landholder's father's father.

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[1] In August 1955 an area 30' x 40' was reported to have been cleared and planted with shade under the direction of the Village Constable.

245 [654] At the time of our survey no one who had a coffee garden had taken any steps to grow cocoa although one man claimed that as a result of a recent visit by an agricultural extension patrol he now proposes to interplant cocoa[1] with the rubber which he had planted, and another who already has coffee claims that he will plant cocoa in one of his subsistence gardens when it is finished. One man was given cocoa seedlings by some kinsmen but he has made no preparations for transplanting them from the nursery.

Only 2 men have made even minor extensions to their original small coffee gardens. In 1961 one of them added about another 70 Leucaena shade trees. The other has extended his coffee plot with 60 young shade trees.

[134] Lowlands coffee (Robusta coffee) is grown and is well suited by the soils and climate. All planters have access to the dark friable loams (*mme*) of the area (but 1 plot planted on an abandoned subsistence garden became waterlogged). *Crotalaria* is used as a shade tree but *Leucaena glauca* is now established in mature gardens. The shade is planted in lines and the sites for [654] the coffee trees are staked out. Some planters, with assistance from agricultural fieldworkers, arranged these on about a 10 foot triangle but the density of trees varies considerably from one plot to another.

Coffee seeds are bought from the agricultural station or are sometimes given by a neighbouring planter. When the shade is established, they are planted in a nursery sheltered with bush materials. The ground is turned with a bush knife and the seeds covered with a layer of soil. Until transplanting an occasional weeding is all the further attention they receive. Seedlings which have grown to a height of about 2 feet are taken to the shaded lines of stakes and transplanted. No root pruning or preparatory holing of tree sites is carried out. The growers claim a high percentage of strikes from the seedings but since few of the recommended transplanting procedures are followed the vigor and yields of the trees are probably reduced.[2]

For the first few months the ground near the seedlings is weeded and later weeds are cut when growth becomes rank. In theory the owners prune the plots about once a year wherever shoots are too long but the incidence of tall trees and suckering shows that more care could be taken in this aspect of husbandry. [654] Arch-pruning (*agobiada*) has not been tried on any of the sample

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[1] Extension officers usually do not encourage the planting of cocoa instead of coffee in this area.

[2] See Cole 1960.

245 [654] plots but agricultural officers intended to launch a campaign in the district in 1963 to induce a wider use of this method which could considerably improve the present disappointing yields.

[221] There is a definite seasonality in harvesting; production in the area reaches a peak in the months of the dry season and falls off after August. Growers are careful to pick only ripe cherries. They take the cherries in a bag to the river, pulp them by trampling the bag and then wash them. The beans are placed in hollowed logs or 'boats', covered with water and fermented for about 36 hours. They are then washed and spread in the sun to dry.

The resultant parchment coffee is carried to Saiho where the Orokaiva Coffee Growers' Society has a buying centre.

435 [434] Not all receipts for sales of coffee from the sample plots had been kept but the 4 producers stated that their sales of parchment coffee had brought them a total of £11 in 1962. With the prices around 1 shilling per pound this would approximate the income expected from 500 trees bearing a little less than half a pound annually.

249 (ii) Rubber. We shall conclude our descriptive account of commercial agriculture with a historical resumé of the overall organization of the production and marketing of the rubber which for 40 or 50 years has been grown at Sivepe and throughout most of this tribal territory. This account seems worthy of inclusion here, not so much as a report on one of the very few areas in the Territory where rubber is produced from trees owned by indigenes, but as a sketch of part of a long and chequered experience of the cash economy which the mountain Orokaiva have had as primary producers.

Members of the clans now represented in Sivepe and Binduta participated in the planting of 4 small stands of rubber (*Hevea brasiliensis*) near their villages in the years following World War I. These plots, known as Binduta, Sarua, Korinasus and Pusahambo, ranged from less than half an acre to about 3 acres in area.

The Sivepe neighbourhood at the time was included in the Kokoda
District, a part of the Kumusi Division. By 1918, 8,000 rubber
plants had been distributed to villages in the district which was
considered too far inland for worthwhile copra production. In
1920 the government plantation, established at Kokoda in 1908,
had 12,000 rubber trees on its 125 acres, and villages in 27 sub-
districts had a total of 5,000 trees planted in stands of their
own. Among these were the 4 plots near Sivepe. The growth of the
[245] trees was said to be vigorous. By 1921, 7,000 rubber trees and
4,900 coconuts had been planted throughout the district and by
1922 the numbers had increased to 8,134 and 6,887. In 1924

249 planting was still being encouraged. The trees planted in the
district were for long the only Papuan-owned rubber plots.

249 These trees had been planted under Native Regulation No.121,
first passed in 1903 but not enforced in this division until the
657 first world war. The legislation states that 'it is a good thing
to plant coconuts and other useful fruits and trees.... The
Magistrate shall fix the number of trees or the area of land, as
the case may be, that the able-bodied men of each district shall
plant' (Native Regulation Ordinance 1908-30).

466 We could not determine how much compulsion was involved in
establishing each of these 'plantations' but in 1921 the Assistant
249 Resident Magistrate reported that planting in the district needed
more supervision than one officer could provide and in 1922 the
657 Lieutenant-Governor said that the threat of force was necessary
to ensure the success of the policy of agricultural expansion
● [245] under the regulation (Territory of Papua 1921-2). A particular
reason for resistance in this district may have been the official
priority given to rubber whereas it was reported ' the natives
prefer coconuts due to their food value' (Territory of Papua
1920-1). A person who refused to plant was liable to a fine of
5 shillings or 6 weeks' imprisonment or to 3 months' imprisonment
for a second offence.

The people of 3 villages, Pusahambo, Euru and Asina, were
249 directed to co-operate in the planting of one of the stands near
Sivepe. After the people of Asina had declined to provide land
it was agreed that the plantation should be established on a
parcel already partly cleared near Pusahambo. Part of this land
belongs to Timumu people and part to Jegase; and although 1 Timumu
lineage sometimes assert that they also hold residual rights in
the Jegase section of the land, they appear never to have questioned
the rights of the members of Jegase and Seho clan branches to the
trees.

The only other plantation to which any member of the sample has rights is Korinasusu. This also is on land divided between members of 2 different clans, Jegase (Bebehupa lineage) and Usohu, who disputed the exact boundary when we enquired about it, but have generally been able to agree on the rights to tap the trees.

249 It seems that the rubber project in the district was designed
so that, from the start, the owners of the rubber should themselves
657 handle much of the production and processing. They were encouraged
to plant lime trees 'so that they can coagulate latex with lime-juice and smoke a fair sheet of rubber for market' (Territory of
Papua 1920-1). However, no facilities for the manufacture or
processing of latex or rubber were introduced. The people claim
that after the planting regulation had been enforced, the trees

433 replacement of his vehicle being necessary but uneconomic. By
249 1958 independent production from his own plantation was increasing
and, despite periodic renewal of enthusiasm for rubber,[1] the number
[464] of village tapping stands had dwindled,[2] due partly, in the planter's
view, to the movement of increasing numbers of able men from their
villages to take paid employment. Already, in 1955, it had been
noted that in the areas near Awala and Sangara there was a serious
shortage of manpower for work in the villages due to the absence of
men employed as wage-earners.

In 1958 the people still interested in tapping adopted the planter's plan that, instead of selling latex at 1 shilling per pound dry weight of rubber as before, they should coagulate their latex themselves and carry it to the factory for sale at 6 pence per pound of coagulum. However if members of a distant village had a lot of coagulum for sale, they might still ask the planter to send a vehicle to collect it without charge.

[435] Bi-annual 'reports on native agriculture' put production from
village stands for the year ending 30 June 1959 at 7,000 lb. (dry
weight) and the price at 1 shilling per pound. In November of the
[464] same year it was estimated that rubber was produced from about 50
acres of village stands. By December another 2,750 lb. had been
produced and the European planter suggested that declining produc-
tion was due to the attraction of labour to the new Sangara
●[245] European plantations and to heavy demands on villagers' time made
by Administration departments and the mission. Coffee and cocoa
planting was said to be increasing at the expense of interest in
tapping rubber. In the first 6 months of 1960, however, 4,700 lb.
(dry weight) was produced; by mid-1964 interest had increased
further[3] and coagulum with an estimated dry rubber content of
[435] 1,500 lb. per year was being produced. In 1962 the price offered
by the planter for coagulum had fallen from 6 pence to 5½ pence
per pound.

249 It is not clear whether the individuals who offered themselves
as tappers after 1946 had been conceded this or any other right
by the rest of the villagers. Responsibility for distributing

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[1] In the first 6 months of 1955 production from 7 plots of rubber 'in the Sasembata area' rose by 60 per cent to 8,000 lb. dry weight (DS-29-855).

[2] The planter puts the number of villages involved at this time at about 30. The number participating at present is still about the same.

[3] Interest was aroused by the Ombisusu rubber project at this time (see p.102).

433 so misguided, they have no reason to expect different results if they plant cocoa as advised by agricultural extension staff. A point of interest here is the fact that although various people volunteered this view on independent occasions, it has never been the policy of the District Agricultural Office to advocate cocoa planting in the Saiho (Sivepe) area, but neighbouring planters have also observed that this is the view expressed among neighbouring villagers.

[434] The areas of the gardens in which coffee was tried were too
small to give satisfying returns.[1] The income of £11 earned by
[438] the sample by weeding, processing and marketing their coffee in
1962 compares unfavourably with the £13 received from the year's
[245] sales of betel nut which grows well in the area, requires no
maintenance and finds a ready market at any time among travellers
on the main road.

[435] It is said that enthusiasm for establishing coffee gardens was at a peak when the Administration paid 2 shillings per pound of parchment and has abated considerably since: a factor of central importance in the history of individual cash-cropping here and elsewhere among the Orokaiva is the fall of the price for parchment coffee - by more than 50 per cent since the Sivepe trees were planted.

The size of the decrease aside, it quickly became apparent to us that because the people have only a limited knowledge of the processing and marketing of coffee once the product has left their hands and no knowledge of the process of price fixation, fluctuations in price seem quite arbitrary. A general fall is seen as another instance of the inconsistent treatment they have come to expect as producers and their response is negative. The withdrawal of interest in extensive coffee production due to the uncertainty of rewards is reported to be common in most villages in this area.
[245] However, while 725 people in the Saiho area experimented with coffee, only 19 people, in 8 villages, have as yet decided to plant cocoa.[2] Economists estimate that the price of each major type of cash crop currently in production in the area can be expected to fall by about another 30 per cent on the world market in the next 5 years.

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[1] The average of 187 trees per grower in the Saiho Census Division (according to rough estimates available in 1963) is not significantly greater than the sample's 126 per grower at the time of our survey. The 1964 agriculture census, which contains much more reliable data, gives the Saiho average as 232 trees per grower and the present average for Sivepe as a whole as 220 trees per grower.

[2] Figures from 1964 census, District Agricultural Office.

241 423 [613] [425] [578] that is then cultivated contiguously,[1] while in the high density areas there is a tendency towards a more individual pattern of exploitation.[2] Short-term rights to land for the non-lineage members are frequently granted (on a reciprocal basis), sometimes to facilitate contiguous cultivation or to compensate for inadequate landholdings. This pattern is promoted by the high degree of fragmentation of individual holdings. Further to this, Rimoldi (1966:62, 95) observes that plots are often permanently transferred outside the direct patrilineal line, and this applies equally to land under both cash and subsistence crops. In the Inonda area, however, Crocombe and Hogbin (1963:73-5) observe that there is considerable reluctance to plant, or make land available for planting cash crops if the land has not been acquired patrilineally, for fear of subsequent disputes. Thus the tenurial situation may be of considerable significance in the development of cash cropping.

245 428 Traditional tree crops are not planted in stands or groups like cash crop trees, but are widely scattered and may equally well be planted on patrimonial land or on land of affines or matrilateral kin. Inheritance of rights to trees usually does not involve rights to the land on which they stand. However, owing to their wide spacing, their presence rarely seriously affects other cultivation of the land.

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[1] The decision-making process has not been investigated but it appears that there is no institutionalised position relating to land matters. An exception is provided by the Yega of the Gona census division who recognise a 'land custodian' (see Dakeyne 1965:55).

[311] [136] [417] [2] It is possible that this is an expression of the fact that sufficiently large areas of suitable secondary forest are not available at any one time to permit contiguous cultivation. Two other factors are that in low density areas wild pigs and other animals necessitate the fencing of gardens, a task which is easier for contiguous groups than for individuals, and that in forest much wider fringe clearing is necessary than in low second growth. The volume of fringe clearing per garden is much reduced if gardens are contiguous.

797 The majority of Papuan teachers remain unqualified teacher-evangelists although the mission is largely responsible for education in the sub-district at the primary, secondary and technical levels. A significant feature of their education programme as a whole remains its total disregard for agricultural training, except incidentally at the Martyrs' Memorial Secondary School where the pupils maintain a coffee garden as well as their own food gardens.[1]

[743] [657] Medical work has already formed a large part of the mission's activities and most mission stations operate a clinic and small hospital while a T.B. hospital is maintained at Embi. As with education, these activities are largely standardised by the Administration and the Department of Public Health is gradually taking over from the mission in this field.

(e) Recent developments in commercial agriculture

241 In 1941 a European planter obtained an agreement, under the Transactions with Natives Ordinance 1893-1935, to exploit the communal rubber plantations in the Awala area.[2] These had not previously been worked. Production commenced in 1943 and continues to date, interrupted only by the Mt Lamington eruption. However, the number of plantations incorporated in the scheme fell steadily and by 1965 only about 30 stands were being worked and tapping had become irregular. This is due partly to poor communications, partly to the fact that an agreement satisfactory to all parties was never arrived at and partly to the planter's own trees coming into full production.[3]

●[245] The re-opening of Popondetta agricultural station in 1954 led to a renewal of interest in cash cropping with, in particular, the extensive planting of cocoa. By 1964 there were estimated to be 491,000 indigenous-owned coffee trees in the sub-district, 244,000 cocoa trees, 25,700 rubber trees (almost entirely the product of natural increase) and 108,000 coconut trees. This pattern of steadily increasing plantings only levelled off temporarily in 1959-60 with falling coffee prices, a shortage of coffee seed and inadequate marketing arrangements for cocoa. At the time labour

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[1] However, agricultural training at several levels has been available since 1955 at DASF's Popondetta Agricultural Station (now Popondetta Agricultural Training Institute).

[2] These had been established during the first world war in that part of the District considered too far inland for worthwhile copra production. There were 137 stands in all.

[3] For a detailed description see Rimoldi 1966:86-93.

241 [433] holdings of commercial trees are not fully, and sometimes not at all, exploited by the owners.[1]

Most have been established on land cleared for the purpose and are seldom interplanted with subsistence crops. However, a 'catch crop' of taro, sweet potato or corn may be taken from the newly cleared land before planting coffee or cocoa and it is only now becoming common to plant commercial trees in subsistence gardens after the food crops have been harvested.[2]

245 The techniques of cultivating and processing cash crops within
the village are simple. Coffee is sold in parchment form. In
most cases the cherries are pulped by stamping in a creek to split
them open, and then the beans are removed by hand and washed. Some
villages possess pulping machines. After fermenting for about
twenty-four hours in wooden containers, the beans are washed again
and sun-dried. A few people erect drying platforms but most simply
spread the beans on sleeping-mats in the village square. The buying
agency rejects parchment that has not been adequately dried but no
price differentials are applied. The coffee season extends from
about March to October and people may begin weeding some weeks
474 beforehand. OCGS announces the season's coffee price (as determined
245 by world market conditions) some weeks before buying commences, but
few producers learn it in advance and, since they need to begin
harvesting a month or two before the time of sale, the element of
uncertainty may deter them from maintenance and harvesting even in
years of high prices. All coffee is purchased by the society,
which is sometimes prevented from buying by lack of funds, lack of
transport, or by the poor state of the roads. Buyers may visit
only once a month or less.[3] There is scope for an immediate
quadrupling of production from existing trees,[4] and more active
campaigns and perhaps additional buyers might help achieve this.

245 Cocoa, like coffee, is maintained, if at all, by occasional clearing of grass and weeds from around the trees. Harvesting is carried out immediately before sale - if possible, on the same day.

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[1] The coffee trees in Popondetta sub-district in 1963 should have yielded about 200 tons of polished coffee, but the actual level of output was only 41 tons (DASF, Popondetta, File 1-6-A(4)).

[171] [2] This practice was followed by indigenous smallholders in Malaysia and Indonesia for two decades and resulted in the planting of millions of acres of rubber by the 1930s. See, for instance, Thomas 1965:101.

[3] In marked contrast to the more densely populated and more accessible parts of the highlands where competition among buyers is keen and some routes are visited daily.

[4] See footnote 1 on this page.

245 Pods are opened under the trees and the wet beans sold to the Popondetta Cocoa Fermentary Ltd, whose buyers operate along all roads in the cocoa areas between the coast and the Kumusi River. Where it would be uneconomic for the company to buy cocoa, as among the Aiga north of the Kumusi, DASF is the buying agent. Cocoa trees produce throughout the year but sales fall off during the wet season.

249 Rubber is sold as coagulum to a local planter who provides spouts, buckets and tools for incising the bark. A halved coconut shell is commonly used for receiving the latex. Two or three hours after the tree has been tapped, the latex is transferred to wooden boxes, hollowed logs or buckets and allowed to coagulate naturally. Until the inception of the Ombisusu rubber smallholders' factory in mid-May 1964, village rubber production in the Saiho area was restricted to a radius of five miles around the only buying agency at Awala, due to the necessity of carrying the rubber on foot to the factory. Rubber trees produce throughout most of the year, although there is a 'wintering' period of three months from August to October.

245 Copra can be sun-dried but most producers build a drying shed either of local materials or of corrugated iron left after the second world war. A shed may belong to an individual or a group and the drying system also may be individual or co-operative. Several hundred nuts are needed to make copra production worthwhile.[1] The nuts are halved and the fleshy interiors placed on a rack above a low fire kept almost smoke-free by using dry wood or discarded shells. After about a week, the copra is dry enough to be bagged and sold at one of the co-operative buying agencies at Killerton, Buna and Oro Bay on the coast. The price is determined by the Copra Marketing Board and varies slightly with quality. [435]

438 [443] (ii) Marketing. In addition to the long-distance trading of subsistence produce by coastal people, the inland people are also beginning to trade meat (pig, wallaby, etc.), smoked fish, areca, lime and locally grown tobacco for cash with other villagers, either by hawking or in the markets held regularly at Popondetta and Saiho.[2] Vegetables also are sold in the markets. At Popondetta a considerable variety of fresh vegetables, fruits and meat is bought by both indigenous and expatriate residents. Most vegetables

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[433] [1] At Inonda there is an average of fifteen coconut trees per household producing an estimated 450 nuts per household per year. Assuming that a household uses one nut daily for cooking or drinking, this leaves less than 100 nuts per household for copra.

[2] See Dakeyne 1965:102-9, for a description of Popondetta market. Although sales of pigmeat in particular to villagers are increasing, the practice is deplored by the older people who have little or no cash in hand.

241 cultivators in New Guinea.[1] This was due partly to changing emphases in the pattern of work between the two surveys, particularly the greater amount of time used for external agencies and in the inception of two communal enterprises (the establishment of a cash crop garden and preparations for the transfer of the village to a new site). Three other factors must be taken into account. [125] Firstly, a slightly different survey technique was employed by Rimoldi. The 1964 measurements were confined to a single point in time, whereas Rimoldi measured all the gardens and then added any extensions which occurred during the survey period (about six weeks) without deducting any areas which might have gone out of [132] production. Secondly, 1964 proved to be a highly unseasonal year at Sivepe in that recorded rainfall in August exceeded that in December (1,542 and 1,416 points respectively) and the number of rain days was the same in each month (24). This disrupted the cycle of agricultural activities and prevented the customary clearing of forest for new gardens during dry weather. For this reason, figures for areas planted but not producing (see Table 4:1) approximate closely to Rimoldi's, whereas cleared and producing areas fall far short.[2] Thirdly, two household heads within the group surveyed in 1964 had been absent from the village for two to three months before the data were collected, and third's activities were partially diverted by his involvement in a contract to build a house at Saiho hospital, and most of the community were involved for several weeks in building the new road to Sasembata and in erecting classrooms on the mission station.

● 245 (b) Economic trees and livestock

The holdings of economic trees (Table 4:3) indicate their importance for subsistence. Breadruit comprises a very large proportion of the intake of starches at the onset of the dry season and only when most of it has been harvested do the people resort to sago-making. *Areca* is chewed by almost all adults, while the milk of the green coconut is drunk as refreshment and the meat grated to use in preparing staple foods. *Hauga* (*Canarium sp.*) nuts, when in season, are gathered and consumed largely by children.

[136] All economic trees,except for the recently introduced orange, grow wild in the bush but are claimed as individual property. Several, particularly coconut, *areca* palms and *hingi* trees, are also planted in gardens and on the periphery of the village.

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[1] See Barrau 1958:32; Brookfield 1962:245, 251; Bureau of Statistics 1963:14.

[132] [2] Similarly, a long unseasonal dry spell occurred during the last few weeks of Rimoldi's survey with the consequent extensive clearing of land for new gardens.

231 Most households keep a few domestic animals which may enter into the network of exchanges. Piglets and chickens are frequently given to others who then become responsible for them until maturity.

Table 4:3

231
245 Sivepe: economic trees and livestock, 1964*

Item	Average	Range
Breadfruit	26	12-42 trees
Areca	18	6-40 "
Coconut	18	6-29 "
Hauga	13	6-23 "
Pandanus	12	nil-32 "
Sago	9	6-15 "
Hingi	3	1-6 "
Mango	3	nil-4 "
Orange	1	nil-4 "
Pig	2	nil-4 animals
Dog	2	nil-4 "
Cat	1	nil-3 "
Fowl	1	nil-5 "

* Seven households.

245 (c) Cash crop gardens

249 Cash crop holdings in Sivepe have been described by Rimoldi (1966:83-93). Briefly, they comprise four individual holdings of matüre coffee and a communal rubber planting of 2.4 acres, established in 1920. At the time of the survey, the rubber was being exploited by three adult members of the sample, together with some other villagers, on a rotational basis.

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245 Since Rimoldi's survey, two unsuccessful attempts to establish individual rubber plantings have been made[1] in addition to a major attempt to establish a communal cash crop garden of 3.75 acres. This latter attempt, initiated in 1963, was finally abandoned in March 1964. It arose out of the village councillor mis-interpreting a DDA officer's description of the Yega scheme[2] at a meeting of the Higaturu Local Government Council and it proved, in terms of

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[1] These were motivated by the opinion that trees in the communal planting were being permanently damaged by unskilful tapping.

[2] See Dakeyne 1966b.

249 man-hours, to be a costly failure.[1] During February and March 1964,
245 some 361 man-hours were spent in cleaning the garden preparatory to
[578] planting. The major task of clearing the area had been done the
previous year. The immediate cause of the scheme's failure was friction between villagers over the crops to be planted in the garden - the councillor insisted on coffee, cocoa and rubber, while most of the others favoured coffee only. Regardless of this aspect, the episode illustrates some of the problems of communication between the external agencies and the indigenous people.

361 Preparations in the latter part of 1964 to move the village to the new site were precipitated in part by the belief that, if located near the end of the new and improved access road (the jeep road from Awala running through Sivepe having fallen into disuse during 1964), the sale of their produce would be made more easy.[2] However, because of the uncertainty surrounding the move, several households had by the end of the year stated their intention of remaining in the existing village.

241 The complexity of the cash cropping situation in Sivepe precludes drawing a clear distinction between cash croppers and non-cash croppers. As Table 4:4 shows, there are various forms and degrees of involvement in commercial agriculture and every household participates in some way. Distinctions drawn on the basis of individual holdings can be most misleading. For example, the head of household 15 is an active cash cropper, although he has no commercial
[887] trees of his own, whereas another man, with 77 coffee trees, did not
work them at all during 1964. While older people tend merely to assist primary kin and appear to receive little direct payment, others are involved in various ways.

(d) Monetary assets

434 Individual holdings of money and other property reflect the use of past income and illustrate the extent of investment and changes in material culture.

[454] The monetary assets of 11 households at the end of the survey amounted to $208.60 (see Table 4:5), 26.9 per cent ($56.10) in cash

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[1] It is assumed that communal clearing and subsequent subdivision into individual holdings had been recommended. In the Sivepe case, the councillor had apparently failed to grasp that subdivision should follow clearing. Two householders claim to have been prevented from establishing individual coffee plantings by him because of this misunderstanding.

[2] See pp.34 and 37.A According to a local planter, the Army Engineers (engaged at the time on public works in the Northern District) promised to provide a weekly truck to Popondetta market if the people built a new road.

[TEXT CONTINUED ON PAGE 47]

A, [See Category 491, pp. 34-37--Analyst]

241 592 bananas, corn, cucurbits and pineapple. The change is probably due to the storable qualities of yams and *Xanthosoma* and the comparatively small amount of attention required during growth by each of the crops showing an increase. The slight increase in corn plantings is due specifically to one man sowing a 'catch-crop' in a garden cleared for coffee. The increase in the number of yam vines, on the other hand, is evident for several households. Although two households had no *Xanthosoma*, the others all exceeded the 1962 average. Of the four households which had more than 20 pineapple plants, two intended to market some of their produce.

245 (b) *Economic trees and livestock*

[592] [231] Table 4:10 shows the average holdings of economic trees and livestock per household. Following the change in the village site, all householders planted several coconut palms around their homes

Table 4:10

Inonda: economic trees and livestock, 1964

245 231 592

Item	Average per household* Bearing**	 Planted in last year	Range (bearing only)
Breadfruit	3	nil	nil-18 trees
Areca palm	1	6	nil-8 "
Coconut	17	25	6-35 "
Rauga	1	nil	nil-3 "
Pandanus	5	nil	nil-16 "
Sago	4	nil	nil-9 "
Mango	1	nil	nil-2 "
	Total		Range
Pig	2		nil-1 animals
Dog	6***		nil-2 "
Cat	2		nil-1 "
Fowl	7		nil-3 "

* Eight households only. Information was not obtained for one household, a widow originating from Urio village. It is unlikely that she possessed rights to trees in Inonda (cf. Crocombe and Hogbin 1963:47), although her sons would.

** One householder claims extensive holdings of the specified trees on the lands of his home village of Hohorita. These holdings, which he did not exploit during the survey and which are excluded from the above figures, include: coconuts, 30; *areca* palm 10; sago, about 50; breadfruit 20; pandanus, at least 50. The claimant is the sole survivor of a large family killed when Mt Lamington erupted.

*** Including 3 pups.

245 and around the village paths and square. Subsequent to the construction of the copra-drier, one man planted 30 coconuts as a first step towards a larger holding of commercial coconut trees. In total, 198 trees were planted by the villagers during 1964. Five householders also established nurseries for areca palms during 1964 or planted them in gardens or the forest. Forty-nine areca nuts were planted, but some may not thrive as conditions at Inonda are less suitable for areca than for coconut palms.

231 All the domestic pigs owned in 1962 had been slaughtered prior to the 1964 survey. The local government council has stipulated for some time that domestic pigs should be penned and the Inonda councillor insisted that this be done. While the matter was under discussion a Jego'undi man died and the villagers decided to avoid the trouble of constructing pigpens by slaughtering all the pigs in a funeral feast. In November 1964, two women were given piglets by relatives.

Three households own a few poultry. One man killed or gave away several during the year. Two men and one woman own dogs, all used in hunting.

(c) Cash crop gardens

245 Three of the nine household heads have acquired holdings of mature coffee trees from their fathers (in one case a classificatory father). Two of these were reduced by a realignment of the road and the owners were compensated in cash by the Administration. Another man, who completed the farmer trainees' course at Popondetta agricultural station, began planting cocoa on land belonging to another lineage but was prevented from continuing by the mother of the future main rightholder[1] and in 1964 almost all the young trees were overgrown with weeds. However, the same man has planted 30 coconuts close by, unknown to the rightholder, and he intends to increase this to 100 palms at least. He has also cleared an area of his own land and planted 202 coffee trees, again as the first instalment towards a larger holding. The seedlings were given to him by his step-brother who had inherited 335 coffee trees.

In November 1964, four of the other six male household heads (including the three men with producing trees) decided to clear a large area of secondary forest for individual coffee blocks on the south bank of the Sambogo river. Two men began clearing, but work was suspended until an agricultural officer could approve the site and soil quality. By the time he visited in January 1965, the men had decided to plant instead in the food gardens near the village after these had been fully harvested. A fifth householder had intended to do this from the start. The other male householder, whose patrimonial land is in Hohorita, intends to return there and plant (although this intention has been current for some years).

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[1] Crocombe and Hogbin 1963:75.

The trade store owner, who is head of household 23, began construction of a copra-drier in January 1964 and sought advice from a kinsman living nearer the coast, where driers are more common. Subsequently, he asked the DASF to send a fieldworker to help in the construction, which took place in August, and this, unlike the initial attempt, was on a communal basis. Even so, the leader still intended to produce copra on his own account, leaving the others to follow his example if they wished. The other men, who individually had access to fewer trees, insisted that production should be on a communal basis and that the proceeds should go into a village savings account.

Individual household involvement in cash cropping is shown in Table 4:11. The widow in household 18 is involved in cash cropping only to the extent of assisting her step-son (head of household 16) in weeding and picking coffee. In return, he gives her a small share of the proceeds. She also helped her eldest son to clear and weed his new coffee garden.

The widower in household 19 gave his original coffee trees to his eldest son in household 17 and staked out an old food garden to plant more coffee of his own, but he had not started by the end of the survey. The head of household 22 has worked frequently for the settlers and now intends to plant his own commercial trees.

Table 4:11

Inonda: participation in cash cropping, by household

Household no.	16	17	18	19	20	21	22	23	24
Individually-owned and exploited coffee trees	335	105	-	-	-	-	-	230	-
Assisting in exploiting coffee	-	-	yes	-	-	-	-	-	yes
Newly planted coffee trees	-	-	-	-	-	202	-	-	-
Mature coconut palms for subsistence and copra	19	33	-	35	6	8	10	117	10
Newly planted coconut palms for copra	-	-	-	-	-	30	-	-	-
Recently planted cocoa trees	-	-	-	-	-	17	-	-	-

245 [442] Coffee must be carried to Awala for sale, about one hour's walk away. Since assistance is often required, marketing becomes a significant component of the total time devoted to coffee production. It is complicated by delays over the arrival of the buying vehicle at Awala, shortage of cash to make immediate payments, and inadequate transport capacity; growers are periodically involved in [484] two or three journeys for the sale of a single load of coffee. Outside the buying season no attention is given to the gardens nor are any ripe berries harvested.

249 While in theory rubber trees undergo a 'wintering' period of about three months (August to October), the communal planting is tapped on a rotational basis throughout the year by seven villagers, including three members of the sample. Table 6:4 shows a peak in activity during period III but this probably reflects the tapping order rather than other considerations and in fact two of the sample households tapped during this period. It cannot be considered as a diversion of activity from coffee to rubber since the two households in question did not exploit any coffee during the year. Marketing of rubber is less time-consuming than coffee as the factory at Awala accepts coagulum at all times.

461 During period I an additional 1.0 hour per man-week was devoted to the communal cash crop garden venture, of which 0.8 hours involved removing regrowth which had occupied the area following initial clearance in 1963.[1] In the balance of the time a few cocoa and rubber seedlings were planted and weeded.

Twenty-four of a possible 32 adults participated in the communal garden, although 68 per cent of the total time expended was provided by 11 individuals from four households. The scheme was characterised by intensive activity during week 1, when 7.3 hours per man-week were expended, falling off rapidly to complete cessation within eight weeks.[2]

464 (ii) Paid work. If the abortive communal venture is disregarded, the village residents devote as much time to paid work as to cash cropping. However, only five individuals were involved in such work, three men erecting buildings under contract to the hospital at Saiho and two young people doing medical work at Sasembata mission clinic.

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[1] This venture thus largely accounts for the increased time spent in clearing during period I. See p.81.

[2] The initial display of enthusiasm may have been influenced by the recency of the researcher's arrival in the village, when the exact nature of his relationship with the other external agencies had not yet been determined.

226 476 branches and to drive the fish into the nets. On both occasions during the survey over twenty people were involved. Operations such as these are initiated by the older men. Participation is voluntary and seems to be based on residence as much as kinship.

342 461 476 Construction of houses generally involves some collaboration in erecting the timber frame and in preparing roofing sheets from sago-palm leaves, but much of the construction is carried out by the houseowner alone. When assistance is received, it may be from a wide range of kin, including agnates, matrilateral kin and affines. The main reason for the size of work group shown as involved in construction at Inonda is the erection of the copra-drier when all the men in the village collaborated.

461 178 [245] It is worthy of note that, except for fishing and sago-making, all activities involving larger work groups are non-traditional activities directly associated with the monetary sector. The largest work groups occur in copra-making and the next largest in cultivation of coffee. As described above, copra-making was initiated by the entrepreneur as his own project but subsequently others combined to make it a village project. Cultivation of coffee is carried out usually by members of the household that owns a garden, sometimes assisted by other kin who have no cash crops or by young unmarried men. There is, then, a clear differentiation between traditional and post-contact activities in terms of the organisation of work groups.

The activity patterns of selected individuals (see Table 7:16)

166 Isemba. This man is unmarried, aged 21 and lives in the household of his elder brother. He reached standard V at Ururu mission school and began training as an aid post orderly at Saiho hospital, but left after eleven months, feeling that his current conditions and future prospects were not satisfactory. He then lived for some months with a relative of the same lineage at Ijika, returning to Inonda for several weeks during periods I and II and remaining permanently from late August onwards. In total, Isemba was absent for 85 days, 92 per cent of which were on visits either to his lineage brother or, for shorter periods, to other relatives. For 3 of the remaining 7 days he was sick and stayed at Hahema village, 2 days were spent at a feast, 1 at a party and 1 looking for work at Popondetta.

[461] [464] Isemba's observed activity patterns seem fairly representative of the behaviour of young unmarried men in the area. Probably his attitudes are also quite widely shared: although he frequently helps his brother and other kin in Inonda and other villages in subsistence tasks and cash cropping and will almost certainly settle in the village when he marries,

three elements of change, first, a trend towards the amalgamation 361
of hamlets into larger units which assume the formal layout now
characteristic of Sivepe, second, considerable mobility of settle- 178
ments, and third, a high degree of individual mobility. However,
the first and second he considers to be largely a function of 166
Administration pressures and of ill-defined aims to improve the
economic base of their livelihood (as is characteristic of Sivepe's
intended move), and the third to be related to the 'vicissitudes
of social relationships' rather than to any connection between
settlement and garden sites.

The changes which have taken place in the range and relative 241
importance of subsistence crops largely reflect the need to find
a more reliable and adequate food supply during the dry season, 178
although the tendency to increase the acreages of both yams and
Xanthosoma at the expense of sweet potato and taro might also
reflect a conscious effort by some to economise on time and effort
in the subsistence sector.

The survey of activity patterns reveals little variation within 433
the samples in the relative importance of the subsistence and ex-
ternal sectors: even those most strongly oriented to cash cropping 184
are concerned first with achieving subsistence. The two most
active people in the Sivepe sample, Linton and Palminus, register
an above average level of activity through the whole range of
tasks, the manner in which they allocate their time being propor-
tionately little different from that of the sample as a whole.
This applies equally to the entrepreneur in Inonda, who spends
over half his working week in productive subsistence activities.
His entrepreneurial activities are directed primarily towards a
trade store which is not particularly demanding in terms of his
time. In this respect his cash-producing preferences parallel [461]
those of other men where contract or casual work is preferred
since, in the absence of strict schedules, it conflicts little
with the requirements of the subsistence routine.

There is little difference between attitudes toward cash and 245
toward subsistence crops. In particular the attention given to
the commercial trees parallels that given to coconuts, areca, [241]
breadfruit and other economic trees associated with the subsistence
sector in that, apart from planting and harvesting, maintenance is
essentially restricted to facilitating access. The absence of any
specialised techniques of arboriculture is carried over from sub-
sistence to cash crop trees, the only distinction being that the
cash crops are planted in formal stands. The work routine is much
the same in that sustained and regular effort is neither required
or given and the duration and intensity of individual periods of
cash cropping work differ little from that for productive subsist-
ence work.

Nevertheless it is incorrect to apply Salisbury's proposition (1962:216-20), that the change from a stone to steel technology in the New Guinea Highlands has resulted in a saving of two-thirds in the time allocated to specified axe-using tasks, as further evidence for labour availability. Apart from the fact that the proposition itself is not based on quantitative data and must be regarded only as a hypothesis, if, for the sake of discussion, the factor of 3 be applied to time spent in clearing, fencing and construction (the main axe-using tasks) in Sivepe and Inonda, an additional 10.8 and 11.6 hours per man-week respectively would be required for the work with a stone technology. Since 10.7 hours in Sivepe and 10.0 in Inonda are already being directed to the external sector each man-week virtually all the labour time made available as a result of this technological change is in fact being utilised. 433

While there is no evidence from the activity patterns to suggest any seasonal conflict in the labour requirements of cash and subsistence cropping there is, nevertheless, some inconclusive data from both villages to suggest that a substantial extension of cash-producing activities would conflict with the requirements of the subsistence sector. In Sivepe the processing of coffee - the most labour intensive of all cash cropping work - and the harvesting of rubber typically occur early in the day and so before the start of the normal daily routine, suggestive of the fact that extra time is 'made' to carry out these tasks.[1] At Inonda it appears that where a household head engages in full-time employment for more than two or three weeks the family finds difficulty in maintaining its food gardens and so meeting all its obligations. [245] [249]

Given that the development of cash cropping bears a direct relationship to activity patterns the data suggest the basic issue to be not one of absolute availability of labour but rather of the organisation of labour and time. The hypothesis is suggested that in a primarily subsistence-oriented economy, those cash-producing activities which do not demand a significantly different and longer work routine will be preferred. The basic feature of this routine is that one activity need not be pursued to the exclusion of others and each can be interrupted at will. So the Orokaiva working day (and week) encompasses a wide range of tasks, each pursued for only a relatively short period of time. As with the Aitutaki villagers of the Cook Islands, 'commercialization has led to few appreciable innovations in the cropping system, land tenure, technology or labour' (Johnston 1967:68). [171] [178]

The present relative adjustment of cash to subsistence cropping may only be a temporary feature of the village economy and the fact

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[1] However, a higher yield of latex is also obtained by tapping early in the day.

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Early in 1966 DASF in Popondetta, working through the OCGS, recommended the establishment of several fermentaries through the area which would purchase cherry. The object of the scheme was, firstly, to increase the cash return to the grower by eliminating time-consuming and inefficient pulping at the village level and, secondly, improve the quality of locally-produced coffee. The Orokaiva expressed their opposition to the proposal; a reaction which is readily understandable in terms of the problems inherent in marketing cherry, with its much lower value per unit weight than parchment.

[4C1]
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Although the transport situation is largely beyond the control of the individual grower, the low level of productivity characteristic of the handling of cash crops is not entirely so. DASF at Popondetta estimate optimum yields of coffee to be of the order of 2 lbs of parchment per tree. The yields realised at Inonda during 1964 amounted to only about 0.37 lb per mature tree although those at Sivepe, where the ecological conditions are more favourable and the cash economy more dependent on coffee, exceeded 1.5 lbs. Although dissatisfaction with prices obtained early in the season frequently deters growers from harvesting all their coffee, as does the obligation to reciprocate with cash any assistance received in transporting it to the selling point, returns to labour are reduced by inefficient techniques. Fig. 13:1 indicates the typically haphazard movements of coffee pickers, where there is no systematic removal of cherries and a tree may be returned to several times in the course of a single period of harvesting. Due to a lack of pruning trees often grow 10 ft high or more, leaving many cherries out of reach. The lack of suitable receptacles in which to put the harvested product further reduces the efficiency of the picker - cooking pots and their lids are often used, leaving only one hand free for the actual picking. Even more inadequate are the techniques of hand pulping often used.

Similar problems are associated with rubber in Sivepe, although a reasonable level of production is maintained.[1] The communal planting contains a large number of closely spaced, self-sown trees which inhibit movement. Ignorance on the part of a number of the users as to the correct method of tapping has resulted in the scarring of many of the trees and a consequent reduction in their yield. As with coffee, trees are tapped at random, while the quality of the latex produced suffers from a lack of proper equipment.

Finally, at Inonda, the first quantity of copra produced was spoiled by smoke when husks were added to the fire. Where there is a communal element, difficulty arises out of a failure to delegate

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[1] See Rimoldi 1966:93.

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SIVEPE: THE TECHNIQUE OF HARVESTING COFFEE

THE SEQUENCE OF MOVEMENT OF ONE MAN BETWEEN TREES OVER A 1.6 HOUR PERIOD

EACH SQUARE REPRESENTS ONE TREE, THE TREES BEING SPACED AT 8 FEET INTERVALS

FIGURE 13:1

7	6	3	4/2																	
		5	1																	
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	9																			
			22																	
		12/10	21/11	23																
13			26	20/27	29															
14	15		19/25	24/32	28/30															
		18/16			33/31	34														
	17																			

433 responsibility effectively, but, in all cases, a serious problem is lack of knowledge on the part of the cash cropper. Such recent developments as the copra scheme at Inonda and the communal garden and individual rubber plantings at Sivepe clearly reflect a continuing interest in commercial agriculture. A general failure to develop the appropriate skills would seem to be explained by the inadequacy of DASF extension patrols. Before the establishment of the Ombi-Tara scheme[1] the department did not formally concern itself with village rubber, while educational patrols in connection with the other crops are infrequent, and so little time is spent in each community that the benefits accruing from instruction are slight.

Table 13:1 details some returns to labour from the production and marketing of cash crops in Sivepe and Inonda. Rubber emerges with the most favourable return, at 12c per hour, primarily on

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[1] See Morawetz 1967.

[TEXT CONTINUED ON PAGE 292]

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Plate 13. Pulping coffee in the creek at Sivepe.

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Plate 14. Collecting latex in the communal rubber plantation at Sivepe. Most of the mature trees are badly scarred by incorrect tapping.

648 722 361 When the Japanese landed at Gona Mission in July 1942, all the Yega - men, women and children - fled into the bush and made their way to Ambasi, 30 miles to the north-west. There they lived for the next two years, returning to the Gona area in 1944. By 1950 they had settled down again on their seven traditional village sites along the coast between Cape Killerton and the eastern end of Holnicote Bay. One new village was established at Surilai on Cape Killerton.

621 614 Clan membership determined the village of residence of each family in the Yega tribe. In some instances, place of residence was determined by membership of a particular sub-clan. Of the eight Yega villages, four were inhabited by male members of more than one clan. The remaining four villages were each occupied by members of only one clan and their wives and children.

361 178 621 [241] [166] After an abortive attempt at communal farming in 1947-52, the large village of Beporo was brought into existence under the direction and guidance of two educated young men who taught that a large village close to the mission church, school and hospital was the 'civilized' form of settlement. Some three quarters of the Yega people, apart from those in wage-work away from home, moved to Beporo village which was expanded to accommodate them. [614] [602] Although a broad pattern of clan residence could still be recognized in Beporo, the clans themselves began to lose their functional identity within the tribe. There was a weakening of traditional kinship patterns of co-operation in everyday activities.

178 245 ● 242 [654] Although their earlier communal farming venture had failed, the Yega were still very much attracted to the idea of making money from cash crops. Accordingly, with the advice of the District Agricultural Officer (D.A.O.), they cleared 15 blocks during 1957-8 and planted them with coffee trees. These blocks ranged from a quarter of an acre to two acres in area; one was planted by a group of six relatives, the remainder by individuals of various clans.

[242] [591] For the most part these coffee blocks were cleared in areas of secondary forest which normally formed part of the land rotation cycle for food crop production. Although they were located at distances of up to four miles from the blockholders' villages, only one man changed his place of residence as a direct result of establishing a coffee block. This man moved to Gatara, two and a half miles inland from his previous home and established a single-family homestead, a settlement quite out of keeping with traditional Yega practice. The coffee scheme failed, partly on account of low prices received for early pickings, and partly because in 1960 a much more ambitious cocoa-planting scheme, the so-called Yega Scheme, was begun. It absorbed most of the energies of the Yega during the following two or three years.

Genesis of the Yega Scheme

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245 The term Yega Scheme has been applied by the Administration to
242 the cocoa-planting enterprise undertaken by the Yega people at
Ononda, four miles inland from Gona Mission.

245 On several occasions prior to 1960, the Yega people discussed
with the D.A.O., Mr M.H. Belfield, their desire to plant extensive
242 areas of cocoa. Suitable land was not available near the coast,
654 and it was not until early 1960 when an old pre-war road was re-
423 opened between Gona and Popondetta that access was provided to
suitable forest country further inland.[1] In March 1960 Yega
178 representatives advised the D.A.O. that land was now available
[491] and sought his advice and assistance in promoting cocoa produc-
tion. The land available was mature rain forest situated about
four miles inland, just north of Ononda Creek (see Fig.5).[A] This
land was part of an area over which the Bowori clan of Yega had
[614] exercised rights until they were completely wiped out in inter-
[926] tribal fighting with the neighbouring Ahora people. Their land
was never reallocated among the remaining Yega clans, but was used
as communal hunting land to which no one Yega clan had any stronger
claim than others. No complex pattern of clan rights applied in
[614] the area so there was no need for compromise among clans during
the allocation of blocks.[2] Allocation of this land, whether for
subsistence gardens or for cash cropping, was vested in the chief
Yega land custodian, Nixon Kairembora, who fully approved of the
cocoa project.

The land was inspected by the D.A.O. and pronounced suitable for growing cocoa. Investigations by the Department of District Administration showed that ownership of the area specified for the cocoa project was not disputed.

245 Agriculture and administration officials tried to avoid some
242 of the problems inherent in the Higaturu Council Land Registration
654 Scheme (see Crocombe and Hogbin 1963:89-96) by suggesting that
plantings be contiguous rather than in scattered plots of irregu-
178 lar size and shape. Contiguous planting would make all blocks

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[1] The road was built pre-war by the Rev. Henry Holland and was used by the Japanese. Its reopening was mainly due to the efforts of the Anglican missionary in charge at Gona, Rev. E. Kelly.

[2] This exceptional circumstance and its bearing on the accord among clans which had prevailed, at least up to the time of writing, is relevant not only to studies of the Yega Scheme but also to the possible use of this scheme as a 'pilot' for future projects.

[A] [For fig. 5 see Category 102, p.45--Analyst] accessible by road, enable more efficient agriculture extension services, facilitate pest and disease control, and permit a centrally located cocoa fermentary.

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To ensure competent local supervision of the establishment of the cocoa plantings, the Agriculture Department Extension Service built a village on the north bank of Ononda Creek. Here trainee agricultural field-workers lived while they worked with the Yega advising and assisting them in the unfamiliar tasks of laying out their blocks, 'lining' the shade trees and ensuring correct spacing of the cocoa trees. The D.A.O. entrusted a local Yega man (Napoleon Aiga of Sambori clan) with the supervision of this work. Although he is not a trained agricultural worker (he was a clerk in the agriculture office at Ioma when selected for the job), Napoleon is a man of great drive and ability; he had the confidence of the Yega and was able to direct and control the trainees who worked with the villagers in the early stages of the scheme.

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Beginning in May 1960, an area approximately 7 by 120 chains was rapidly cleared by communal labour with most of the men of all Yega clans taking part. Provision was made for a road down the centre of the cleared area; 48 blocks were marked off, 24 on each side of the central road on 5-chain frontages. The number of blocks was based on the number of men who originally showed interest in participating in the project, plus two special blocks: one was allocated to the mission and one beside the Gona-Popondetta road was reserved as the site for a future fermentary. The remaining 46 blocks were allocated by ballot to participants in the work. The 46 men to whom blocks were allocated represented almost all Yega lineages; those lineages not-represented were ones in which only old people remained in the villages, the young men having left home to work in paid employment elsewhere. After the ballot, one week was allowed for voluntary exchanges before a firm list of blockholders was drawn up. This firm list was, however, still subject to alteration within the framework of the traditional Yega land tenure system. Any cultivator considered to be unsatisfactory could be disciplined by the land custodian; if a blocholder failed repeatedly to comply with the standards expected he could be dispossessed, and his block reallocated to another cultivator. One such reallocation did, in fact, take place late in 1960.[1]

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(425)

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[1] The blockholder ignored three warnings from Nixon about his laziness. As a result he was dispossessed and his block allocated to another cultivator; compensation of $3 for work done already was paid by the new blockholder.

245 242 423 178 The Land (Tenure Conversion) Ordinance of 1963 altered the tenure position by permitting the granting of individual title to any blockholder who desires it. By July 1964, 17 blockholders had applied for registration of their blocks as the first step to obtaining individual title. When conversion orders were made in favour of these applicants, their blocks were no longer subject to traditional tenure.

With the establishment of individual titles, a pattern seemed likely to develop of dispersed homesteads on smallholdings. In the original clearing no demarcation had been made of the fourth (rear) side of each block since by common agreement each blockholder was permitted to extend his area of cultivation by clearing additional forest on that side. Limits to such clearing were set by Epa and Ononda creeks to the south, and by the Gena and Seseko clan boundary markers to the north. This meant that there was room for extension of each block to a maximum of seven to ten acres.

245 242 178 The initially cleared area of each block, about one and a half acres, was ready for planting with shade trees (leucaena glauca). By August 1964 each block had been planted with about an acre of shade and cocoa trees. In some poorly-drained sections, numbers of trees of both types had died but the drainage problem could, it was thought, be overcome by deep-ditching. Late in 1962 and early 1963 many young cocoa trees suffered a severe setback as a result of infestation by army worm (tiracola plagiata). Marked irregularity was noticeable in the growth of the cocoa trees: this may be attributed to the depredations of army worm and, to some extent, to micro-variations in soils or topography.

The irregularity of tree growth was reflected in the wide variation in production from block to block. Production of cocoa had commenced at Ononda almost exactly four years from the inception of the scheme. Many blockholders had not, in August 1964, started to pick their cocoa but others were already harvesting regularly and systematically. No attempt had yet been made to establish a co-operative fermentary on the site provided. Instead, [439] [435] the Popondetta Cocoa Fermentary Pty Ltd made a monthly trip to collect wet beans from Ononda and two other centres. The price in August 1964 for wet beans at the fermentary was 5½ d. per pound. The price paid at the villages was 3 d. per pound, 2½ d. per pound being deducted for collection expenses.

[434] Cash income earned by the Yega from cocoa was still very small. Work time expended by Yega villagers varied widely. In a few instances pods were picked the previous day but most people picked and opened pods on the morning of the collection. Pods were opened under the trees on the blocks; the wet beans were then carried in cooking pots, basins or sacks about half a mile to the collection

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242 point at Ononda bridge. Production details for the two occasions
178 observed are given in Table 1.

245
242 Table 1

433 Yega Scheme cocoa production and growers' income on
434 two occasions

Name	Picking of 1 July 1964				Picking of 29 July 1964			
	Pick-ing	Pods*	Net wt. lbs.	Amount received $	Pick-ing	Pods*	Net wt. lbs.	Amount received $
Wilfred	3rd	86	16	0.40	4th	?	5	0.12
Timothy	3rd	810	143	3.58				
Dick Shepherd	3rd	519	116	2.90	4th	400	103	2.58
Ethelbert	2nd	205	45	1.12				
Livingstone	2nd	408	79	2.08				
Spencer	2nd	136	30	0.75				
Wilson	1st	123	21	0.52	2nd	34	3	0.08
Needham	1st	96	16	0.40				
Reginald	1st	62	18	0.45				
Roy	1st	14	3	0.08				
Geoffrey	1st	60	12	0.30				
Randolph	1st	36	8	0.20				
Hubert Murray	1st	176	30	0.75				
John Livingstone					3rd	?	50	1.25
Bruce **					?	250	56	1.40
Aubrey					3rd	103	27	0.68
Faithful					4th	410	83	2.08
Dewhurst					1st	50	9	0.22
Total		2,731	537	13.53		1,247	336	8.41

*Average 100 pods for 21 lbs wet beans; average beans per pod is 31 (count of 13 pods selected at random).

**Bapa man, not member of Yega Scheme.

242
245 Incentives and income distribution

434 The Yega Scheme provided the middle-aged men in particular with an opportunity to increase their incomes. The younger Yega men
178 working for wages away from the village were not attracted back home by the prospects of cash crop planting. Only one unmarried man left his job (in the police force) to return home and obtain a block in the scheme.

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Yega Scheme cocoa blocks looking N.W., January 1963.

Yega workers resting under shade trees. Cocoa trees 18 months old, February 1962.

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Harvesting cocoa pods, July 1964.

Selling wet cocoa beans to fermentary representative, July 1964.

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Table 2

Ages of blockholders in the Yega Scheme compared to other Yega men of working age

Age grouping	Men with cocoa block No	Men with cocoa block %	Men without cocoa block No	Men without cocoa block %	Men working away from villages No	Men working away from villages %
Under 30	7	15	13	20	53	62
Over 30 and under 40	16	35	17	26	23	27
Over 40 and under 50	17	37	17	26	6	7
Over 50	6	13	18	28	3	4
Total	46	100	65	100	85	100

Note. Ages are in most cases estimates and for the last category estimates by informants.

Table 2 indicates that, of the 46 cocoa blocks in the Yega Scheme, 33 (or 72 per cent) were held by men aged 30 to 50, slightly more than half of whom were over 40. Only 28 per cent of the persons allocated blocks were either under 30 or over 50 but nearly half the persons not allocated blocks were in these groups. The larger number of old men without blocks is understandable. They had few needs other than food and betel nut and the cost of small luxuries like sugar and rice could usually be provided by their sons. On the other hand, there was a very strong desire to obtain cocoa blocks on the part of middle-aged men who did not yet have them. There were few men aged 40 years or over working away from the village, though most of them had been away during their youth. The table emphasizes the distinct preference of young Yega men to work for wages away from home rather than to remain in the village: 89 per cent of the men working away from the village were under 40. Other data showed that 79 per cent of all bachelors over 16 years of age were working away from home or had recently returned from wage employment.

434 In addition to their earnings from cocoa production, Yega villagers had four sources of income.

[439] [797] i. Exchanging surplus agricultural produce with the mission, which gave tobacco, razor blades, needles, fish hooks, salt, etc. in exchange to the value of one penny per pound weight of produce. This mission barter enabled the Yega to obtain small useful items with no loss of time, for even though prices at the Popondetta market were about three times higher, to get there required about half a day's walk in each direction carrying the produce.

434 438 ii. The marketing of agricultural and marine products and handicrafts. Yega participation in the Popondetta market held

Work patterns

Traditionally among the Yega members of one lineage worked 461
together to clear the forest in preparation for planting food 241
gardens. The cleared patch was subdivided among those who helped 464
with the work. Planting and caring for the growing crop was the 613
responsibility of the individual and his family. This traditional
pattern was modified when clearing rain forest for the Yega Scheme 178
when the able-bodied men of all lineages worked together. The 461
cleared blocks were then allocated by ballot and the individual 464
concerned was responsible for planting shade trees, laying out a 242
seed bed, planting out the young cocoa trees, 'lifting' shade as 245
the trees increased in size, and keeping down the weed growth. 613
In most instances, relatives who helped the blockholder with these
tasks were compensated. For example, the cocoa pickings on
29 July (see Table 1) by Aubrey and John Livingstone were made
from the same blocks as those by Ethelbert and Livingstone on
1 July. Aubrey is a member of the same lineage as Ethelbert and
John Livingstone is a son of Livingstone. As part payment for
work done previously on the blocks these two men were permitted
by the blockholders to harvest one month's cocoa production. Other
relatives who had helped with the work would be given a similar
privilege.

Late in 1962 and early in 1963 many Yega moved their homes to 166
the new villages of Ononda and Binjapada (see Table 5),[A] the reason 242
given in every case being to live closer to their cash-crop areas.
In January 1963, however, the move had not resulted in a signifi- 245
cant increase in the amount of time spent on the cocoa blocks.[1] 461
This was because of the time spent building their new houses. Only 464
one man out of 12 spent any time working on his cocoa block during
the period 14-28 January. The remainder divided their time about
equally between building and work in their food gardens, which
were scattered between the coast and the new cocoa blocks.

Several attempts were made to introduce communal labour into 242
the production of cocoa. The first was organized by a blockholder, 245
Wilfred Upena, early in 1963. He and 17 others belonging to five 464
different Yega clans agreed to do a day's communal work clearing 476
rain forest to extend each man's block in turn. As the originator (614)
of the scheme, Wilfred's turn was first and an acre of rain forest
was cleared on his block on the first day. But on my return a year
later no further communal work had been done by the group.

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[1] An unsupervised record of daily work was kept by a man living at Ononda from 14.1.63 to 28.1.63, but it was of only limited value.

A, [For Table 5, see Category 166, p.43--Analyst]

242 243 464 476 [614] The second attempt at communal labour was by the men of Kurou clan, who agreed to work on specified days on the two cocoa blocks allocated to Kurou members. This scheme was initiated in mid-1963, but only two days' work was done.

The third attempt at communal labour, in July-August 1964, owed its origin to a suggestion made by the Yega councillor in the newly-formed Oro Bay Local Government Council that the Yega should perform communal work on the cocoa blocks on Tuesday each week. The work to be performed was only cutting grass and clearing additional forest, not harvesting cocoa. The first two work periods under this system were observed and the workers counted by a Papuan assistant. The results were remarkable. On both occasions over 60 adults worked for times ranging from 3 to 8½ hours, with a mean time on the two days of 6½ and 8 hours respectively. No matter what time people started work, 'knock-off' time was by whistle at 4.30 p.m.

245 461 Cocoa was harvested by individuals. Details of the work times of two men harvesting cocoa for sale to the fermentary representative were observed as follows:

Ethelbert, 1.7.64 (assisted by son aged 6 and daughter aged 8)

Walk from village to cocoa block	25 minutes
Harvest 205 cocoa pods and collect in one spot	55 minutes
Remove beans from pods	50 minutes
Await arrival of fermentary vehicle, weigh produce, await payment	1 hr 35 minutes
Total	3 hrs 45 minutes

Aubrey, 29.7.64 (unassisted)

Walk from village to cocoa blocks (including visit to friend on way)	45 minutes
Harvest 103 cocoa pods	1 hr
Remove beans from pods	40 minutes
Await arrival of vehicle, weigh produce, await payment	2 hrs 10 minutes
Total	4 hrs 35 minutes

[434] The cash reward for labour performed may be seen in Table 1. Ethelbert received $1.12 while Aubrey received $0.68.

161 162 in 1960[1] compared with the distributions determined by personal
interview in November 1962 and July 1964.

361 Table 4 and Figs 4 and 5 illustrate the movement of people away
166 from the coastal villages and the rapid increase in number and size
of inland villages which followed the implementation of the Yega
242 Scheme in mid-1960. The men interviewed gave two main reasons for
245 this move inland. The men who were allocated a cocoa block moved
so that they would be closer to this new field of work; those who
were not allocated blocks moved in order to remain near to their
relatives.

361 The movement inland began immediately after the start of clear-
ing the cocoa blocks. In July 1960 a young unmarried man of Seseko
166 clan moved from Beporo and took up residence in the D.A.S.F. settle-
ment. He was soon followed by others from Seseko clan, many of
them from Kanaunje and Niniyanda villages. These villages are
furthest from the cocoa blocks and, being backed by swamps, have
more difficult routes of access than other Yega villages. Conve-
nient village sites were available for the newcomers on two patches
of grassland known as Ononda and Binjapada. Seseko clan claimed
[423] hunting rights to Binjapada and a Seseko lineage claimed cultivation
rights to Ononda which had been used by Seseko members as a food
garden some years previously. There was therefore no dispute over
building sites. Even when some members of clans other than Seseko
desired to move from the coast in 1962-3, they were allocated
building sites on Seseko land close to the houses of Seseko members.
The growth of Binjapada and Ononda villages is shown in Table 5.

The result of the migration inland was the development of a 'ribbon' pattern of settlement along the Gona-Popondetta road (Fig.5).A Binjapada was likewise a ribbon pattern on a side road. The houses in Binjapada were much farther apart than in the coastal villages. This is because the house sites were located close to cocoa blocks (Fig.6).B

A development which might have far-reaching effects upon the future Yega settlement pattern was the attempt by several holders of cocoa blocks to locate their dwellings upon the projected extensions to their blocks (Fig.6). As early as November 1962 the holder of block 16 had moved his home from Beporo village to a site on Binjapada grassland which he calculated would be the extension of his block (see Fig.6). By July 1964 his example had been

[TEXT CONTINUED ON PAGE 48]

A, B, [For Figs. 5 & 6, see Category 361, pp. 45-46--Analyst]

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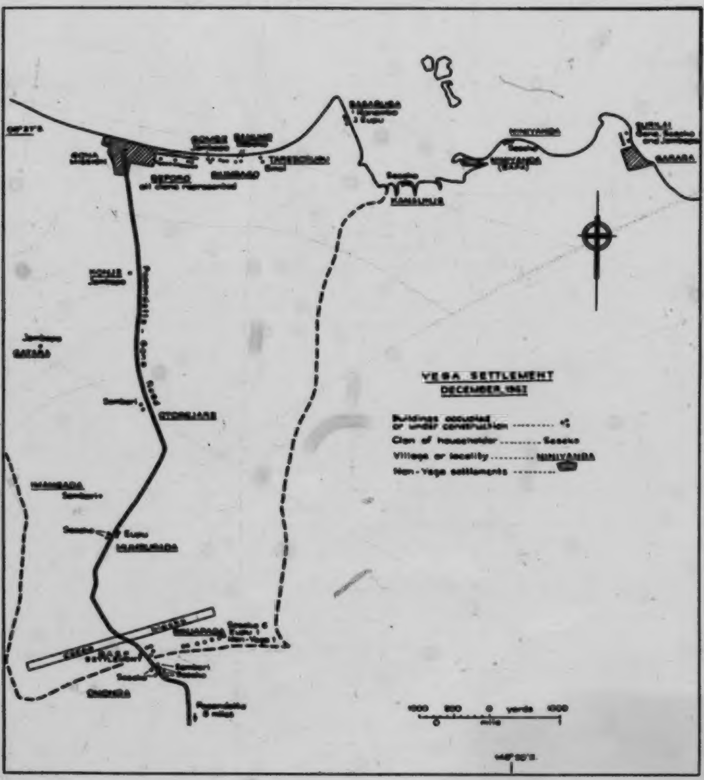
[1] Calculated from the census taken by the author in 1964. Some degree of error is possible because of the movement of paid employees and their families.

Figure 4


YEGA SETTLEMENT
DECEMBER 1962
Buildings occupied or under construction
Clan of householder .... Sasako
Village or locality ....
Non-Yega settlements ....
Sasako
Eupu
Non-Yega
ONONDA
1000 500 0 yards 1000
0 mile 1

102
361
131
491
245

Figure 5

102
361
131
491
245

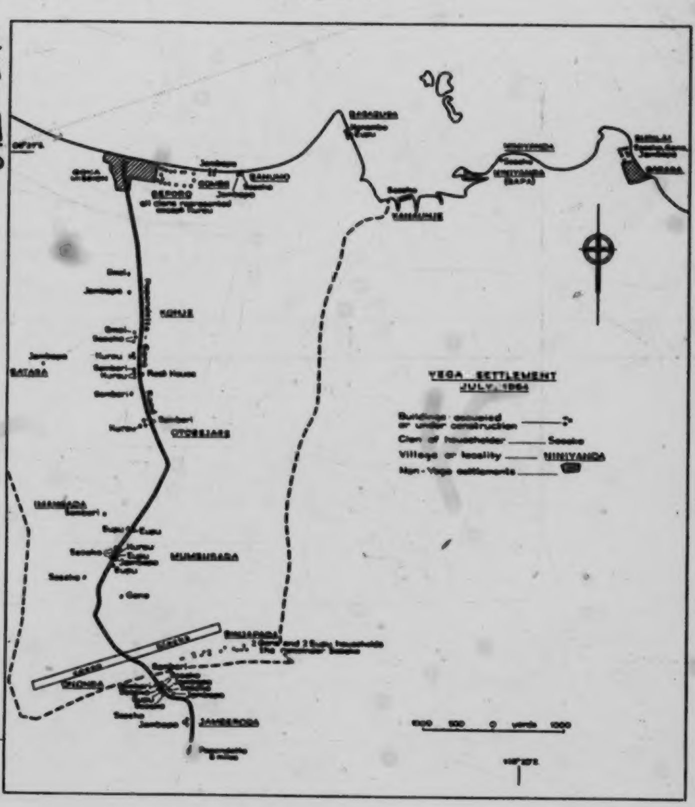
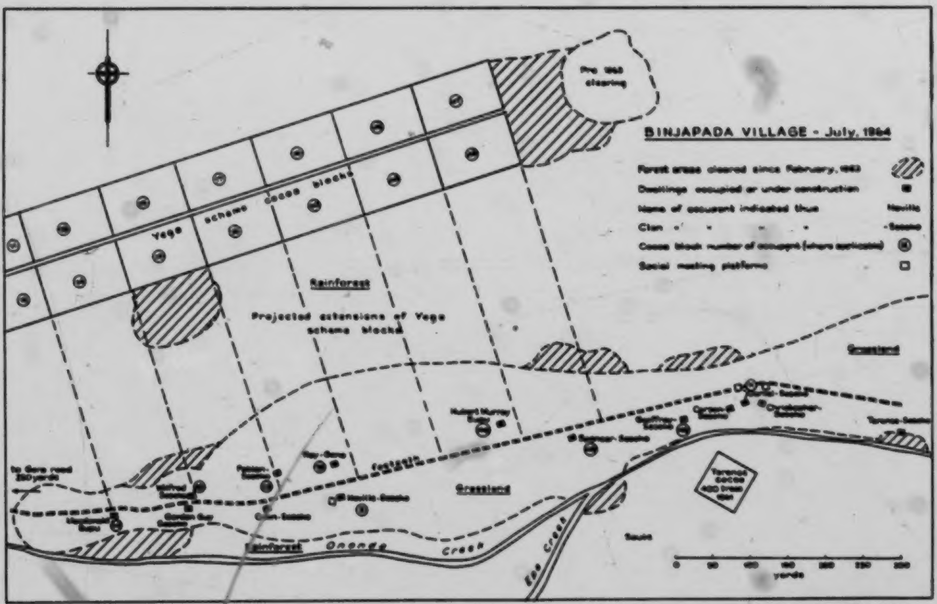

YEGA SETTLEMENT
JULY, 1964
Buildings occupied or under construction
Clan of householder Seseho
Village or locality NINIYANDA
Non-Yega settlements
Rest House
yards

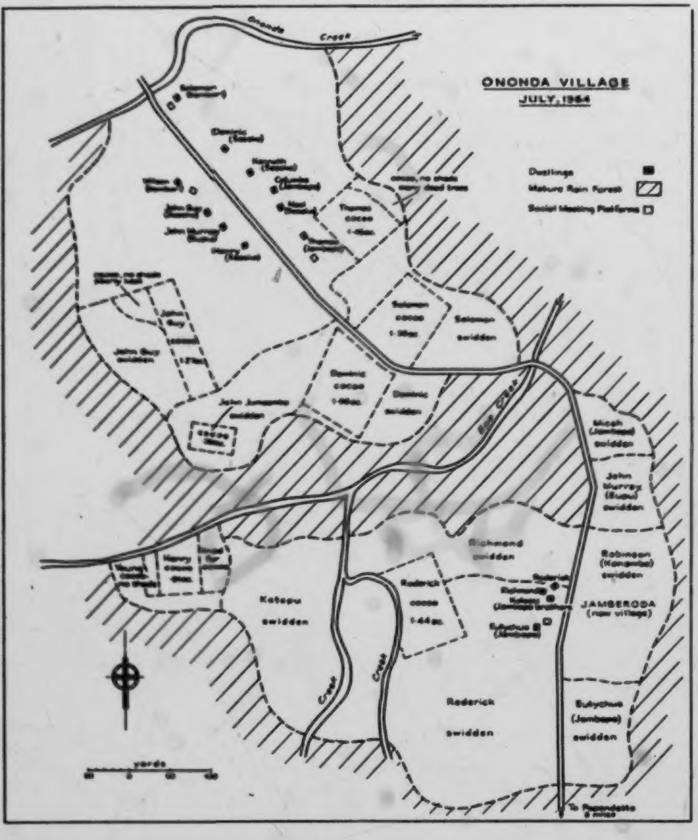
Figure 6


BINJAPADA VILLAGE - July, 1964
Forest areas cleared since February, 1963
Dwellings occupied or under construction
Name of occupant indicated thus Neville
Clan " " " " " -Sasabo
Cocoa block number of occupant (where applicable)
Social meeting platforms
Pre 1963 clearing
Yega scheme cocoa blocks
Rainforest
Projected extensions of Yega scheme blocks
Grassland
footpath
Neville-Sasabo
Hubert Murray
to Gora road 250 yards
Grassland
Rainforest
Ononda Creek
Eao Creek
Swamp
Grassland
0 50 100 150 200 250 300
yards

102
361
245
614
311
489
133

Figure 7

102
361
245
311
491


Ononda Creek
ONONDA VILLAGE
JULY, 1964
Dwellings
Mature Rain Forest
Social Meeting Platforms
Thomas cocoa
Solomon cocoa
Solomon swidden
John Guy swidden
Dominic cocoa
Dominic swidden
swidden
Micah swidden
John Murray (Bubu) swidden
Richmond swidden
Robinson swidden
Roderick cocoa 1.44ac.
JAMBERODA (new village)
Katepu swidden
Creek
Creek
Roderick swidden
swidden
yards

361 followed by the holders of blocks 14, 18 and 46.[1] In the develop-
166 ment of the new settlement pattern at Binjapada, the existence of
an elongated grassland area lying roughly parallel to the cocoa
blocks cannot be ignored. The absence of such a grassland area in
the vicinity of the western section of the cocoa blocks was one of
the main reasons why no similar 'shoestring' village developed
there. Holders of blocks in the western section built their new
homes either in the village of Ononda or in smaller hamlets beside
the Gona-Popondetta road at distances up to two miles from their
blocks. Those who built in Ononda were in general men with no
previous cultivation rights to garden land close to the cocoa
361 blocks. After establishing their homes in Ononda village most of
these villagers cleared rain forest in the Ononda area, thus
166 establishing their cultivation rights to nearby areas of land.
241 Villagers who established new homes along the road, on the other
hand, in most instances built upon or near to land over which they
423 possessed cultivation rights. To the men in this group, proximity
to food gardens was a powerful subsidiary reason for moving inland.

Extension of the Yega Scheme

178 245 The foregoing description shows that the Yega Scheme was a major factor in recent changes in Yega land use, land tenure, cash income, work organization and place of residence. The process begun by the Yega Scheme generated further change, particularly amongst those Yega who did not obtain cocoa blocks at Ononda.

245 In February 1963 many Yega were disappointed because they had no individual area of cocoa. It had already become apparent to most of them that a half or quarter share in the block of a relative would return them very little income; all those who had missed allocation of one of the Ononda blocks were, therefore, very eager to clear a further block. Clearing did, in fact, begin on a new block parallel to and south of the Ononda block, the week the author left the area in mid-February 1963. However, very soon after this, the Yega organizer of cocoa planting, Napoleon Aiga, was posted by D.A.S.F. to another district, and instead of continuing with another 'block' development, people began clearing and planting in scattered blocks. Seven blocks totalling about eight acres were planted in this manner. Several aspects of these plantings require comment.

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[1] According to the author's rough pace and compass traverses, two of these men had in fact built their dwellings on neighbouring blocks. Accurate surveys were therefore needed in order to avoid future difficulties.

245 423 All plantings were made on the south side of Ononda Creek in the area which the Yega claimed because it was their Bowori (extinct) clan land but which the Ahora also claimed by right of conquest. The Yega decided to reinforce their claim by occupying at least a portion of the disputed territory (Fig.7).

241 245 423 (614) (613) A large area of rain forest was cleared for food gardens in addition to the cocoa blocks planted. Permission to clear was in all instances given by the land controller, Nixon Kairembora. Swiddens were cleared by members of Sambori (1), Jambapa (5), Konambo (1), Eupu (1) and Seseko (3) clans. Cultivation rights to the land on which these swiddens were made would then be vested in the lineages to which the individual gardeners belonged.

166 361 245 241 One instance of change of residence as a result of these new clearings was noted. Three Jambapa brothers built their homes on Jamberoda grassland near which they had cleared a swidden and planted food crops and cocoa (about half a mile south of Ononda village and well into disputed Yega/Ahora territory). These houses were the furthest extension of the ribbon pattern of settlement developing along the Gona-Popondetta road; this hamlet typified the Yega trend away from large nucleated settlement to a farmstead pattern in which homes were dispersed on or near the main garden and cash crop areas.

245 423 In March 1964 a group of 23 Yega men, only one of whom had been allocated a cocoa block at Ononda, decided to clear another large tract of rain forest which would then be divided equally among the participants in the scheme. The site chosen for this new block-type development was Berojou near the south-west Yega/Beuru boundary. This boundary had been declared by the Land Titles Commissioner, surveyed, and marked by cement boundary posts. Though final siting arrangements for the individual blocks had not been completed it was expected that blocks would be approximately 10 chains frontage by 20 chains depth (frontages double those of the Ononda blocks).

245 423 614 602 The Berojou scheme differs in two major respects from the earlier Yega schemes at Ononda. Firstly it was sited on land over which certain clans, Jambapa and Kurou, had recognized rights of allocation and secondly all members of the group concerned in the development were members of these two clans or had close affinal ties with them. Men related to Jambapa were allocated blocks on Jambapa land while men related to Kurou were allocated blocks on Kurou land. These relationships illustrate the way in which rain forest was traditionally cleared by the Yega. A close affinal tie was usually essential before a person could be invited to join another group and clear rain forest belonging to another clan.[1]

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[1] Ten men in this group planted the land of other clans. In six cases their mothers were members of the clans on whose land they

245 Work on this scheme had not progressed far at the time of observa-
476 tion because of unseasonable weather. Underbrush and small trees had
been cut by each individual on his block but it was decided to wait
for dry weather before cutting the big trees by communal effort.
All Yega would then be invited to help and helpers would be recompensed after the clearing of each block by a feast given by the blockholder and his family.

245 As with the Yega Scheme, the advice and help of Agricultural
(242) Extension Service officers was requested and given. The site was
inspected and soil suitability evaluated before the Yega started
[484] clearing. However, although the layout of the Berojou blocks
closely resembled the Ononda blocks, they are half an hour's walk
[487] along narrow footpaths from the Gona-Popondetta road, the only
vehicular road in the area.

245 The people concerned in the scheme lived in various places.
361 Most lived in the Konje area, one at Mumburada, one at Gatara,
while eight lived in Beporo and one further away at Gombe. How-
166 ever, it was likely that the Beporo and Gombe people would move
inland in the near future. There was at the time no talk of moving home sites to the new cocoa blocks at Berojou.

Conclusions

241 The clearing of rain forest for planting blocks with permanent
245 tree crops whose produce was to be sold for cash was a radical
178 departure from traditional Yega land usage. The Yega Scheme in-
corporated traditional principles of land tenure and work
423 organization with modifications to meet the changed circumstances
of today. Features deriving from traditional precedents were:

[476] [464] (i) the use of communal labour to clear the forest, and the subdivision of the cleared area among those who helped in the work;

(ii) the absence of any documentary record of the transference of rights to individual right holders (although this was later provided under new legislation);

[464] (iii) the organization of group labour for certain tasks even though recruitment of members might not necessarily be based on purely traditional criteria;

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245 (continued)
423 planted, in one case the wife was, in one case the father's sister's
614 husband, in another the half-brother by a different father and in
602 the last case, the father of a half-brother.

241
245
178
[423]

(iv) the strong desire of individual members of extended families each to have personal control of a piece of land and of useful trees on that land.

The aspects which had little precedent in traditional custom were

(i) the systematic layout of blocks;

[433] (ii) the production of crops for sale;

[242] (iii) the supervision and guidance of Agricultural Extension officers and workers, most of whom had no kinship ties with the Yega;

[361] (iv) the provision for the location of a blockholder's dwelling on the block itself rather than in a village.

The value of the Yega Scheme is this combination of old and new which was achieved by basing the scheme on traditional precedents in so far as they were appropriate and incorporating innovations where necessary. The main innovations were organizational and technological - involving new crops, new husbandry techniques, new 241 processing methods and equipment. There was an increase in some 245 forms of group activity, for example bush clearing by all the Yega (whereas bush clearing was traditionally carried out by sub-clan 178 groups), and the proposed co-operative fermentary and marketing 464 facilities. On the other hand, a greater dispersal of residence and the adoption of new mores were responsible for some diminution of traditional forms of group activity. In pre-contact times the family was the basic unit for garden work but larger groups formed for other activities. With the addition of cash crops, agricultural work took more time and many of the larger groups for fishing and social activities atrophied.

241 The rights of the individual in cash cropping land will become 245 more marked in relation to those of the sub-clan and tribe. Whereas food gardens were held by individuals or small descent groups and 178 rights at this level were flexible due to rapid demographic changes and the system of land rotation, cocoa is a relatively permanent 423 crop and the planter is associated all his life with the land on which the trees are planted. With change in the legal status of the land the rights of the social group to the cash crop lands are certain to diminish in favour of individual rights.

361 The new pattern of residence, showing tendencies towards 'ribbon' 178 development and particularly towards the dispersal of homesteads, varied markedly from the traditional form. Most significant of all variations from tradition was the location of homesteads by individuals on potential extensions to their cocoa blocks. With [423] the registration of individual title to these lands it seems likely that this trend will continue. If the trend towards dispersion

Only three Inonda men exercise fishing rights out-
226 side Inonda. The first two are members of the Jego'undi sub-
423 clan who were given rights to fish in the Sambogo river from Ere
creek to Mosou village by their mother's brother along with the
hunting rights already described. The part of the river con-
cerned is adjacent to the part held by the Andiriha sub-clan. As
Mosou village is situated close to the Jego'undi portion of the
river, some Mosou men who have distant kinship connections
with the Jego'undi are permitted to fish there. All parties
confirm that no payment is made for this privilege but we have
observed that the Mosou people make gifts of betel nut and sago
to the Jego'undi. The Inonda councillor was given exclusive
rights to fish part of the Sambogo river (adjacent to the Andiriha
part but at the other end from that held by the Jego'undi) along
with hunting rights to the surrounding lands.

241 Cash crops: Only small areas of land are being
used for cash cropping (see map page 109[A]). In 1955 three
households planted a total of 801 trees on 1.85 acres of land
situated near the Girua river on Hohota lands and these trees
241 are now in production. They are planted on land to which the
423 planters previously held only permissive rights of occupancy,
although since 1961 these rights have been strengthened by
registration under the Higaturu Local Government Council land
registration scheme (which is explained in Appendix A). The
problems associated with this land are discussed on pages 72-75.
In 1961 another man planted 0.41 acres of cocoa on Inonda land
in which another lineage has prior rights, but this will not pro-
duce for some years yet. A fifth man has staked out 0.6 acres
of land at Inonda which belongs to a lineage other than his own,
but because of the resultant dispute he will probably not plant
coffee on it as originally intended (for details see page 75).

245 The small amount of coffee produced is sold in the
parchment stage. If it is assumed that each tree will produce
half a pound of parchment coffee annually then total production
for the village will be approximately 400 lbs. The income from
this, if parchment coffee is sold at 1/- per pound, would be only
£20.0.0 per year for the whole village. Details of production
during the past three years are shown in Table 4.

[A] [See Category 102, p. 109--Analyst]

Table 4

Inonda coffee production(1)

245
433
435

Year	Household No.	Weight (lbs. parchment coffee)	Price per lb.	Value
1960	1	242	1/2 and 1/3	£14.13. 4
	3	61(2)	" "	3.14. 4
	4	103(3)	" "	6. 3.11
	Total	406		24.11. 7
1961	1	246	1/-	12. 6. 0
	3	76	1/-	3.16. 0
	4	24	1/-	1. 4. 0
	Total	346		17. 6. 0
1962 (to Aug.)	1		1/-	6. 0. 0
	3		1/-	3. 0. 0
	4		1/-	4. 0. 0
	Total			£13. 0. 0

[127]

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(1) Details of sales were obtained from receipts issued to producers by the Orokaiva Coffee Growers Society (for sales in 1962) and by the Department of Agriculture (for sales in 1960-1). Information for 1960 and 1961 is probably complete (except for sales from household 4 for 1961). Figures for 1962 include producers' estimates of the value of coffee they harvested during the first eight months of the year.

(2) Part of this coffee was sold by the brother of the head of household 3.

(3) Part of this coffee was sold by the step-father of the head of household 4.

231 pigs and fowls available for feasts, there is no opportunity for the numbers of livestock to multiply, and demand always outruns the supply. Nor can the demand be met from neighbouring [435] villages for they are beset with the same problem. Some European planters breed pigs for the local market and have no difficulty in obtaining £10 to £15 for pigs of moderate size to be killed for feasts. If the problem of the current customary obligation to make one's livestock available for feasting could be overcome, pig and poultry breeding for local consumption and local marketing would appear to be a fruitful source of cash income as well as of protein good.

Economic trees

241 The most important trees in the Inonda subsistence
245 economy are sago, coconut, betel nut, hauga nut, breadfruit, and pandanus. Sago is used for food as well as construction, while [124] the others are used for food only. Information on economic trees was gathered by interview only and, except in instances where we were able to check during the course of other work,
423 they were not counted on the ground. Economic trees are usually planted on land held by the lineage of the planter, but as rights to them are sometimes transferred by gift and inheritance between individuals of different lineages, sub-clans and clans, many persons hold rights to trees on land held by descent groups other than their own. Apart from a right of access, rights in trees do not entitle the holder to any rights in the surrounding land.

423 In addition to the rights of those born in Inonda, some wives claim rights to use economic trees in their home villages.
241 They do not claim exclusive rights to specific trees,(1) but
245 rather the right to harvest some produce from trees held by their fathers or brothers. This right is usually exercised only in the event of a shortage of food from the husband's land, or if the wife is on a visit home. During our stay we observed two persons exercising such rights - one to make sago about three

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(1) With the exception of one woman who had been allocated specific coconut trees by her father.

423 241 245 miles away and another to collect betel nut about fifteen miles away.(1)

The rights of females who marry outside the village vary according to distance, frequency of contact with the home village and adequacy of supplies of that tree in the locality where they reside. It is said that a widow can return to her village of origin and resume rights which had been exercised by her brothers since her absence. We found no instances of females who live in or originate from this village having exclusive rights to any tree, either in this village or any other, though instances do occur of trees being given by a woman's brother or father to her children.

222 Unlike in other parts of the Orokaiva country sago does not grow wild in Inonda though some wild sago is collected by Inonda people from other lands in which they hold rights. [262] Sago is eaten mainly in the latter part of the dry season when other foods are short, or at other times when large quantities of food are needed for funerary or other feasts. What people refer to as 'a tree' is frequently a clump of trees in various stages of growth, but all of which have originated from a single plant.

423 241 245 A total of 21 sago trees was accounted for on Inonda lands, but the bulk of sago supplies is obtained from outside the area. Four Inonda people claimed five trees at Sambogo, where their forefathers had lived before shifting to Inonda. All Inonda people claim rights to wild sago growing at Aramba, the "original" home of the Andiriha and Jego'undi clans, and some of them have made sago there in recent years. The Inonda people claim the right, along with other branches of their clans, to use whatever trees they need. People from this village also make sago from wild trees bordering the Embi

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(1) Sago is difficult to prepare and heavy to carry and is usually obtained from the closest possible source, even if this means making arrangements with persons to whom one is not closely related. Betel nut, on the other hand, is light, and it is easier to go a longer distance and obtain it from some close relative than it is to get it closer if that would necessitate contracting obligations with more distant kin.

423 Lakes; those who are related to the Sauhaha people use trees on
241 the Sauhaha land, and those who are related to the Tandai'undi use trees on their land. Three Inonda men claim rights in six
245 sago trees in their mothers' villages.

Although informants usually refer to trees as being individually owned, in fact they are more often owned by siblings (or half-siblings of the same father) and merely referred to in the name of the eldest male sibling. Thus all but three sago trees in Inonda were owned by more than one person. Moreover, it is apparent that the Inonda people recognize implied qualifications to these rights. The resident adult children of the 'owners' are regarded as having the same rights of use (but not of control or disposal) as their fathers. Qualifications are particularly noticeable in the case of sago and a man who is not using a sago tree can scarcely refuse it to a resident cousin or even an unrelated neighbour who requires it. As a sago tree takes about fourteen years to mature, it is not unusual for a man not to have one ready when he needs it. Also, as a large quantity of food is obtained from each tree, it is common for villagers who are not closely related to exploit jointly a tree which belongs to one of them. During our stay two sago trees were harvested. One group of four men (who belonged to three separate lineages of the same clan, but one of whom lived in Hohota) harvested a tree belonging to one of them. Another man harvested a tree which belonged to his wife's family and was growing in the neighbouring village of Urio.

The village people claimed 104 coconut trees in Inonda and said that (excluding children absent at school) only two non-residents owned coconut trees there. Both were contingent members of the Inonda sub-clans. One Inonda man has 4 trees on his father's lineage land in Hohota, and two others claimed a total of 15 trees in the villages of their respective mothers. Two others claimed that they had rights to trees in their mothers' villages though they had not exercised the rights and were not sure how many trees were involved.

Betel nut does not grow well in Inonda and there are no bearing trees in the area. One man still uses three trees which he planted on the land of a neighbouring tribe in the

429 mountain area while taking refuge there during the war. Two
241 others have been allocated specific trees in their mothers'
villages. One obtains supplies from his wife's village, but most
245 Inonda people must obtain their betel nut by barter or purchase
from villages further inland.

Only two households own hauga nut trees in Inonda (a total of 8 trees). One man has two trees on his lineage land in Hohota village, one has four trees in his mother's village and there are some hauga trees in Aramba which Inonda people harvest on visits there.

Breadfruit are relatively plentiful, 52 trees being noted, not including 2 at Ajoro which are owned by one Inonda man, and 2 at Hohota by another. Some 37 pandanus trees were recorded in addition to one each at Hohota and Aramba. We found no instances of pandanus trees being owned by non-residents other than men who were contingent members of the Inonda sub-clans. On the other hand several breadfruit were owned by the children of women who originated from Inonda but had married elsewhere.

Non-monetary valuables

436 The Inonda people recognise two categories of non-monetary valuables; firstly hambo which are ornaments made of sea shells, pigs' tusks, dogs' teeth etc., and secondly di which are ceremonial head-dresses made of feathers. Hambo and di are exchanged at certain ceremonies and sometimes given in recognition of a service rendered or as a token of apology. They can also be acquired by barter, and there is still some trade in shell ornaments from the coast and in feathers for head-dresses from the mountains. In recent years, however, valuables have frequently been acquired by cash purchase.

It is difficult to value hambo and di in terms of cash and whatever formula one adopts has its inadequacies. It is nevertheless important that some attempt be made to equate them, for valuables and cash are in some circumstances acceptable substitutes for one another (especially in meeting traditional social obligations) and the acquisition of the one is to some extent in competition with the acquisition of the other.

429 necessary for the normal growth of the tree or trees concerned.

[245] In contrast to the random pattern of planting of traditional tree crops, coffee and cocoa must be planted contiguously and in relatively large numbers. It is not normally feasible for the land to be used for any other purpose at the same time, and it is therefore desirable that the planter have effective control of the land. Clear identification of rights is particularly necessary because of the value of the crop. It may also be desirable in giving the individual a degree of freedom from his descent group, for as more facilities are provided by larger institutions (local and central government agencies, missions etc.) the need for co-ordinated action by the descent group diminishes and it may even function more to limit the aspirations of members than to supply their needs.

There would not seem to be any advantage in defining or registering lineage boundaries, or the food gardening [241] areas of individuals. People frequently plant food crops on the [613] land of other lineages and this does not seem to cause any acute problems. It is a matter of convenience, done at the invitation of the rightholding lineage, and it results in a reduction of bush 425 clearing and pig-fencing. Furthermore, there are accepted processes of transfer of proprietary rights from one lineage to another and we recorded several such instances. The transfer is seldom completed in a single transaction, but rather takes place over time, and the nature of the rights transferred is modified by occupation and other circumstances. Even if short-term cash crops (such as peanuts or rice) were introduced, it is unlikely that major tenure problems would result unless cropping were undertaken on a large scale.

Aspects of work organization which inhibit productivity

461 There is at present a considerable surplus of working time available over and above that required for subsistence and cash cropping. Table 11 (page 63) shows that the average time spent per week on subsistence activities and cash cropping was 14.7 hours for men and 16.0 hours for women. This suggests that E.K. Fisk's comments to the effect that the unexploited labour supply of South-East Asia is one of its major sources of productivity may equally apply here.(1)

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(1) Fisk, 1961:778.

461 apply only to activities which are traditional or local. They do not apply with the same intensity to wage labour outside the village.(1) If major increases in cash cropping were to eventuate the amount of time now spent in festivities would need to be reduced or, alternatively, bought foods would need to be substituted for garden crops at feast times.

Other limiting factors

241 **Income:** Past experience has made people cautious about the prospects for their present cash crops. They are aware of the failure of the attempt to establish oil palms as a cash crop in the 1920's, of the abortive sugar project of the early 1930's, of the compulsory planting of coffee in the same decade and the subsequent collapse of the coffee market with the outbreak of war, and of the introduction and failure of rice cultivation in 1948-49. Some are aware too of the collapse of the peanut market within two years of the introduction of peanuts as a plantation crop in 1957. It was not, however, tried as a village crop on any significant scale. Though the people are not aware of the precarious state of the world market for coffee and cocoa today, they are aware of the price decreases over recent years.

245 434 Income from cash crops is not only uncertain, it is quite small and the people derive much less income from their coffee than they expected. This is due in part to unrealistic expectations, but also to decreases in price between the time of planting and the present,(2) and to inadequate knowledge of coffee husbandry. In the village context it is unlikely that the average man could, after meeting his family's subsistence needs and social commitments, clear and maintain more than two and a

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[776] [178] (1) We are nevertheless informed by many Orokaiva people that the number and duration of traditional ceremonies and the number of people participating in them have all decreased markedly during recent years. They have been replaced to some extent by church festivals and sports but these activities are said to take much less time. This view is confirmed by comparing the social activities of today with those described by Williams, 1928 and 1930. The period of mourning after death has in particular been reduced and now involves fewer people.

[435] (2) The cash price per pound paid to the grower was 2/- in 1959, 1/6 in the early part of 1960 and 1/2 in the later part, and 1/- in 1961-2. The price at present being paid is 11½d. per lb.

245 half acres of coffee or cocoa. This would yield no income for
434 the first four years and a maximum of £100 per year thereafter
at current prices. This assumes an absence of land problems
and crop disease. Even so, the prospect must be heavily discounted
[464] because of its uncertainty. Wage labour is now available
to a limited extent at a rate of £150 per year in town areas and
[465] about £75 per year in rural areas.(1) At the time the coffee
was planted, paid employment was scarcer and wages much
lower.

471 **Capital:** Almost no capital is used in primary production
245 in Inonda. The few tools needed for small scale production
are easily acquired from current income, the land is not an
[654] item involving monetary cost, coffee seeds are available from
neighbouring gardens and cocoa pods are supplied by the Department
[494] of Agriculture at nominal cost. One man in a neighbouring
village has a coffee huller in which the Inonda people
have small shares, but as the Orokaiva Coffee Growers Society
(to which the Inonda growers belong) provides for all other processing,
there is no need for any other equipment in the villages.
Although the introduction of capital may increase output,
considerable increases in output are possible without it, and
capital cannot be regarded as a serious limiting factor in Inonda
cash cropping at this stage.

164 **Health:** During the period of the survey about 7% of
461 time was accounted for by sickness and caring for the sick, but
details of sickness were not recorded for those who were in
mourning in their houses. The total for the period is estimated
at 10% of all time accounted for. From superficial enquiries
malaria seems to be the main cause of illness but other common
ailments seen during our stay were filariasis, gastro-enteritis
and influenza. The suitability of the diet for sustained hard work
is not known, though it was noticed that men seldom work two days
in succession on heavy labour like bush clearing (though they performed
regular heavy work for wages). On several occasions
when the nights were particularly cold the people got up shortly
after midnight and sat around fires for the rest of the night to

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[466] (1) Indentured labour is paid less, but relatively few Orokaiva are prepared to accept
[511] indenture. Direct comparison of gross incomes from cash cropping as against urban
employment ignores the fact that food and housing costs are much higher in towns.

164 461 keep warm. As a consequence they slept much of the day following.

177 245 Non-traditional experience: Table 14 below shows that there is a correlation between non-traditional experience (in terms of years of paid work and education), and the planting of cash crops. Table 15 shows that there is likewise a correlation between years spent outside the village and the planting of cash crops. Absence from the village is generally but not invariably associated with work or schooling. The data presented in the tables suggest that an increase in non-traditional experience is associated with increased interest in cash cropping.

Table 14

Comparison of non-traditional experience (in terms of paid work and schooling) with planting of cash crops

Total years in paid work or school	Number of Coffee or Cocoa Trees	Code No. of Household Head
45	see note (a)	8
17	335	1
16	288	4
11	150	7
10	0	6
8	178	3
4	0	5
0	0	2

(a) This man is a stranger in the village, but he is currently planting extensive cocoa gardens in his village of origin.

m
245

Table 15

Comparison of years of absence from home village with planting of cash crops

Total years Absence from Village	Number of Coffee or Cocoa Trees	Code No. of Household Head
36	see note (a) in Table 14	8
7	288	4
5	335	1
5	178	3
5	0	6
4	150	7
4	0	5
0	0	2

554 245 There is also a close association between status in the village and the planting of cash crops. The three persons with highest status in the village are the previous head of the joint sub-clans who has now gone to the government resettlement scheme where he has planted more cash crops than any villager,(1) the subsequent head of the joint sub-clan who has most (335) coffee trees and the councillor (who is son of a former head of the sub-clan) who has the next most (288). It is clear (and supported by comparison with neighbouring villages) that those with highest status in the community are the ones most likely to plant cash crops or likely to plant most. Evidence elsewhere in the Pacific suggests that the man of influence is shifting his emphasis from traditional means of gaining prestige to modern ones based on the acquisition of money. It appears that this trend is taking place in the Popondetta area also.

121 157 It might be mentioned incidentally that Keesing (1951:5-14) considered the Orokaiva to be culturally predisposed to absorb the types of traumatic change of residence and social relations which were a consequence of extensive and persistent

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(1) He has planted 1,161 cocoa trees.

657 423 support is an essential prerequisite to land reform in a democratic state, and many examples exist in the colonial world wherein provisions for reform have been resisted or boycotted because of opposition to the institution prosecuting the reform rather than to the reform itself. (1)

Coffee processing and marketing

657 274 From its inception the council expressed the view that processing and marketing should be handled by the Orokaiva themselves (either through the council or some other authority set up for the purpose). Administration officers were generally sympathetic to this view though some doubted the capacity of the council to operate such an enterprise efficiently. It was agreed that the factory and equipment should be owned by the Orokaiva, but the question of management was left in abeyance.

[245] During the 1920's "communal" village plantations were established throughout the Orokaiva area under the Native Plantations Ordinance 1918. (2) Part of the proceeds of produce sales was distributed to villagers and part was deposited in a fund to be used for specific purposes including education. The project was resumed for a short time after the war and a credit balance remained in the Sangara Native Coffee Trust Fund. This money was used as part payment for the purchase of hulling, winnowing and polishing machines for the factory. The balance was met by a loan from the Native Loans Board (which is an agency of the central government). [348] A factory building was erected for the council by an indigenous contractor at a cost of £800. The building was completed and the machinery installed by January 1959. Until this time the processing and marketing of coffee had been undertaken by a private firm.

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(1) Local reaction will be determined largely by the relations between the people and the authority implementing the reform. Owing to the precarious nature of relations between people and government in this Territory considerable emphasis will need to be given to public participation if the reforms proposed in the Lands Commission Bill 1962 and the Land (Tenure Conversion) Bill 1963 are to be successfully implemented.

(2) This project will be described in detail in a forthcoming issue of this Bulletin.

472 Agricultural extension services were begun about 1950. A, B and
654 D had close relations with particular officers and received
242 significant help from them.

The number of cash crop trees owned by the entrepreneurs in
472 December 1965 is shown in Table 2, together with the number of
423 years since that person began cash-cropping. An attempt was made
to estimate the number of adult male kin and the number of employees
472 who have worked with each entrepreneur in terms of man-years, but
464 this was unsuccessful because the people have no clear measure of
the periods of time spent by each worker with the employer. Even
when the period is reasonably accurately known it is difficult to
use comparatively, for relatives who assist do so only from time to
time and even employees were often not paid a regular wage nor expected to work all the time.

Table 2

472
423
245

Commercial trees owned by entrepreneurs in December 1965

Entrepreneur	Years since cash-cropping began	Coffee trees	Cocoa trees	Coconut trees	Total trees	Acres*
A	20**	4,400	3,500	-	7,900	22.9
B	14	2,512	1,153	-	3,665	9.6
C	13	-	717	340***	1,057	8.5
D	5	-	3,337	-	3,337	13.3

* Estimated from tree figures using conversion ratios of: 500 coffee trees per acre; 250 cocoa trees per acre; 60 coconut trees per acre.

** As most of A's pre-war trees were destroyed during the war, only his post-war cash cropping experience is considered here.

*** Most of these are old coconuts which were growing before C took over.

423 There may be a slight relationship between number of trees and
241 the period since cash-cropping began, but I suspect there is a
greater correlation between extent of cash crops and the supplementary
464 labour used, whether mainly from kin in the case of A, B and C,
or by using loan funds as in D's case.

Retail trading, manufacturing, processing and transport

472 All four entrepreneurs own stores. A and B aspired to own trade
441 stores for many years but did not establish them until they had
literate sons to act as managers. The other two entrepreneurs are
(212) themselves literate. An illiterate employee operates C's store but

472
441 the price at which he bought (e.g. a knife bought at 87 cents
444 would be sold at 90 cents).[1]
434

Irrespective of profits, stores are both a convenience and a
[564] source of considerable prestige to the owner.

472 No records of customers were kept, but from casual observation
it appears that customers are either persons who are unrelated and
441 not resident in the same locality or close kin and close friends.
438 The more distant relatives and the residents in the owner's village
often go to considerable trouble not to buy from the local entre-
578 preneurs. They justify their avoidance with stories which depict
the trader in a personally unfavourable light, though some point
[474] to the lower prices and wider range of goods in Popondetta, and
others to the advantage of buying from local co-operatives which
provide rebates and benefit everyone, rather than from private
stores with higher prices and individual profit.

These arguments should apply equally to the customers of the
entrepreneurs, but they do not seem to in practice. I assume that
this is due to the fact that the entrepreneurs do provide credit,
[452] assistance with life crises and other advantages (including the
attraction of close association with men of prestige) to very close
friends and kin, but decline to provide these privileges to more
distant kin and neighbours. These people feel entitled to special
consideration and are affronted by refusal. C, the trader with
the largest turnover, built his store in a village other than his
own[2] and most customers come from that and three neighbouring
villages. Most people of his own village of Hanau buy from a
[474] co-operative store further away. A's main clients are plantation
workers, as most of his fellow villagers use the co-operative even
though it involves a long walk. D's store was located on a main
road until a re-routing of the road left him without his main
441 source of clients - people walking along the road.

472 Since 1964, D has been buying cotton piece goods which his wife
294 makes up on her sewing machine into skirts, dresses and shorts for
sale in the store. Demand for these goods is greater than the
438 supply and a girl is now hired part-time to assist with sewing.

[464] A, B and D sell small quantities of garden produce or hunted
441 meat at irregular intervals at the Popondetta market.

472 A undertakes commercial processing for other persons, having
[438] established a cocoa fermentary with the help of agricultural
472 officers in 1962. The building cost $500 from his savings and an
245

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[1] Having limited experience in handling money most of the entrepreneurs round prices to the nearest ten cents as far as possible.

[2] The other three all have their stores adjacent to their homes.

472 informal 'company' was formed to operate the enterprise. There
245 were sixteen shareholders, all residents of A's hamlet or the
absent sons of residents. A contributed $144 in cash while the
[471] others contributed $10 each. This money is used as working capital
and placed in a Cocoa Account at the savings bank. It is controlled
[454] by A's eldest son, who is referred to as chairman of the
company and is generally responsible for the handling and marketing
of produce.

245 Wet cocoa beans were bought from villagers from moneys in the
438 Cocoa Account at 3 cents per pound and fermented and dried. They
were shipped through a local trading firm and sold on the London
439 market. The fermentary has not been very successful because most
villagers outside A's hamlet sold to a European fermentary which
collected the beans and paid a higher price. Another, and perhaps
[628] more important, reason that the local fermentary was not patronised
lay in tensions and divided loyalties within the neighbouring
villages. From early 1962 until May 1963 only 7,080 pounds of wet
cocoa beans were processed using the temporary fermentary. No
[454] later figures are available but the credit balance in the Cocoa
Account rose from $174.07 in June 1963 to $470 in January 1966.

472 All four entrepreneurs aspire to owning a motor vehicle. A's
493 early attempts were declined by officials,[1] and his attempt to
establish a bus service in 1963 (for which he had sufficient
494 finance) was thwarted when the only licence was granted to an
expatriate. He still gives top priority to buying a vehicle for
his own cartage and for hire. B had the funds but not the driving
skill.

472 The difficulty of acquiring a skill such as driving is often
overlooked. For a person in a rural area it is usually necessary
493 to go to a town and get a job. Even then one may spend several
[484] years in an unskilled job without getting the opportunity to learn
[464] to drive. Few Papuans have vehicles and most people are naturally
reluctant to allow others to practise on their vehicles. B's son
has now tried unsuccessfully for three years to find an opportunity
to learn to drive. C and D have each been seeking a cheap second-
472 hand vehicle for some time, but the likelihood of establishing a
493 successful carrying business is doubtful, for overheads are high,
494 business would probably be irregular and many of the potential
customers would have difficulty in paying. In the long term, as
incomes rise, there will certainly be openings for such ventures.
In the meantime, however, there is a danger that a transport business
would survive only if it was subsidised in part at least from

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[426] [1] Official approval was then necessary for indigenous people to go
[656] into debt.

463 The five subjects who had hired labourers who were not related
472 to them all paid cash wages. A and H have received $1,500 govern-
ment loans to develop their blocks and have thus had the capital
464 to pay for labour. They have not relied on kinship assistance at
426 all. The loan has been an effective substitute for kin ties. L
derives the capital necessary to hire labour from her trade store.

657 It will be noted that all non-relatives are paid in cash, but
most relatives are paid in kind. Most entrepreneurs are still
463 dependent on the help of relatives, as they do not have the cash
472 to pay hired labour, and are thus forced, willingly or not, to
465 exploit their kinship ties.

464 Property

602 Land and cash crops. Most of the twelve subjects did not have
any records of cash crop production or sales, so it was impossible
463 to calculate their success in cash-cropping according to these two
criteria. For this reason their cash-cropping activity has been
472 assessed in terms of the number of economic trees each has planted.

423 Ten of the twelve entrepreneurs have cash crops, and another has
245 cleared land for 500 coffee trees. The following table shows that
the most successful entrepreneurs have the fewest cash crops. The
[426 largest cash croppers (A, D and H) have leases of government land
[427 and government development loans of $1,500, but even when they are
[657] omitted the proportions between the three groups remain similar.

Table 13

Commercial trees owned by each entrepreneur*

Entrepreneur	Coffee	Coconut	Cocoa	Total economic trees	Title to land	Years since cash-cropping began	Average trees
A	100	-	1,085	1,185	L	3	702
B	-	-	-	-	-	-	
C	334	88	-	422	C	?	
D	-	-	1,200	1,200	L	4	
E	1,600	11	-	1,611	C	20	1,800
F	300	46	100	446	C	9	
G	388	52	-	440	C	7	
H	-	-	4,702	4,702	L	4	
I	-	170	200	370	C	11	168
J	intends to plant	-	-	-	C	-	
K	150	-	-	150	C	9	
L	150	-	-	150	C	10	

* Coconut and other trees used for home consumption only have been excluded.

383 and later to be provided by the people themselves. This idea was
654 taken up by the villagers and the first bush rubber processed at
Ombi-Tara was purchased by the Department of Agriculture on 5 June
1964.

[439] An Agricultural Assistant was stationed full time at Ombi-Tara
and he helps to grade, weigh and bale the rubber.[1] The baled
rubber is purchased monthly by an Agricultural Officer who drives
to Ombi-Tara from Popondetta. It is marketed in Australia through
the Papuan Rubber Pool.

249 Tapping is organised on a rotation system, with one man tapping
434 the bush rubber stand each month, producing between 70 and 200 lb
of Ribbed Smoked Sheet, and earning between $12 and $34, depending
of his diligence and the price of rubber.

383 In mid 1964 the villagers built a smoke house, a machine house
474 and a baling house, all of local materials, for the equipment on
loan from the Department of Agriculture. The baling press was
[654] provided on permanent loan by a local planter.

[402] On 27 October 1964 an Ombi-Tara Village Savings Account was
[454] opened at a bank in Popondetta with the sum of $227.50. During
the following year money was paid in at irregular intervals at an
average rate of about $14 per month.

On 12 February 1965 the Ombi-Tara people paid $177.72 for their own rollers and coagulating pans which they now use for processing, leaving the Department of Agriculture free to transfer its equipment to another recently initiated scheme. Extra coagulating pans were bought for $91.20 on 16 October 1965, leaving a balance of $117.84 in the village account.

[651] No deposits were made between October 1965 and the end of
January 1966 because of the need to save money to pay the Local
Government Council tax ($5 per man) and the Mission jubilee contribution ($2 per householder).

243 While the bush rubber processing project appears to have been a
[797] success, almost every other attempt made by the Ombi-Tara people at
planting cash crops has failed. They participated in a communal
rice growing project in 1950, encouraged by the Anglican Mission,
but it was a failure, as were similar projects in other parts of
245 the district. Later in the 1950s a communal cocoa plantation of
[654] some 400 trees was established with Administration encouragement.
Disputes over the organisation of work and the distribution of
proceeds caused the abandonment of the project shortly afterwards.[2]

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[1] During our stay all rubber processed at Ombi-Tara was graded Ribbed Smoked Sheet No.2.

[2] On the communal rice and cocoa experiments in the Northern District see Crocombe 1964a:29-33.

245 Individual planting of cocoa was tried next, with twenty-one
people planting between 20 and 1,300 trees each. The average
[435] plantation size per person was 318 trees. Pests and later the
sharp fall in world cocoa prices discouraged maintenance and most
of the cocoa trees have now been abandoned.[1] Ten people have each
planted between 200 and 560 coffee trees with moderate success.
In view of this history of setbacks and discouragements there is
added significance in the enthusiasm of the Ombi-Tara people for
tenure conversion.

Origins of conversion

177 An Ombi man named Charles was instrumental in persuading the
464 people of the merits of conversion. He had attended the local
mission school for two years and, after a year as a medical orderly
at Saiho hospital, worked for eighteen months on a rubber planta-
tion at Sogeri. Next he worked in Rabaul with two other Ombi men
for an oil company. At the end of his eighteen months' contract
the company returned him to Ombi. He had intended to return to
Rabaul to take up a $24 a week job he had been offered as a taxi
driver but was elected Local Government Councillor at Ombi-Tara
and held that position for seven years until 1963. He has worked
for eight months as a cook at the nearby Sangara ex-servicemen's
plantations, and had intended to apply for one of the Papuan
resettlement blocks at Sangara before he heard of the possibility
245 of establishing a tenure conversion scheme at Ombi-Tara. He planted
249 1,300 cocoa trees, 400 coffee trees and 300 bush rubber trees before
conversion was introduced, and had planted 661 of the new high
yielding rubber seedlings up to November 1965, well above the
village average.[2] He has been employed full time since October
1965 on road maintenance work near Ombi.

Conversion at Ombi-Tara began with a visit by a resourceful
242 Agricultural Officer (Mr D. Birmingham) in mid 1963. Noticing
249 Charles planting some bush rubber seedlings the officer asked
whether he might not prefer to plant some of the higher yielding
Malayan rubber seedlings which the Department of Agriculture would
supply at low cost. Charles agreed and recommended other villagers
to do likewise. The Ombi-Tara people agreed and a rubber nursery
was established close to Ombi village soon afterwards by the

[TEXT CONTINUED ON PAGE 13]

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[1] The Ombi-Tara people's experience with cocoa demonstrates that a sharp decrease in world commodity prices can affect progress in developing countries not only by causing earnings of foreign exchange to fall, but also by so disheartening village producers that they cease production altogether.

[2] See p.32.[A]

A [See Category 245--Analyst]

18: Dakeyne K-5 (1962-1964) 1969
OJ23 Orokaiva OJ23
Yega

614 No male member of a Yega clan has any rights
423 whatsoever to land outside the consolidated
block of parish territory. All Nasioi, on the
000 other hand, are members of widely dispersed
matrilineal clans. Many of them, both men
and women, have rights to cultivate land far
from their village of residence. For a Nasioi,
the focus of loyalty is not the clan as a whole
but the small segment of it with which he (or
she) is intimately associated, in the parish
where he lives.

177 The degree to which contact with Europeans has affected each group differs greatly.
The Northern District of Papua where the
[245] Yega live is the scene of recent rapid development in cocoa planting by both Europeans on large plantations and by indigenes
241 on small-holdings. The Yega are a relatively
well-educated group of people but they have
433 a record of failure in the production of cash
crops. Many of the younger Yega have there-
[464] fore left the parish territory to work for wages
in skilled and semi-skilled jobs in the towns.
000 Fewer Nasioi go to work in the towns but
many have worked locally as plantation
labourers. Recently copper has been discovered
within their territory and now many men work
for the mining company which offers higher

102
131

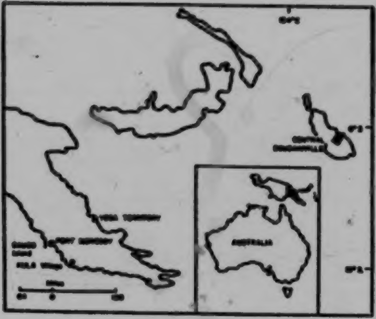

Fig. 1. Location of the three case studies

[P.4-A]

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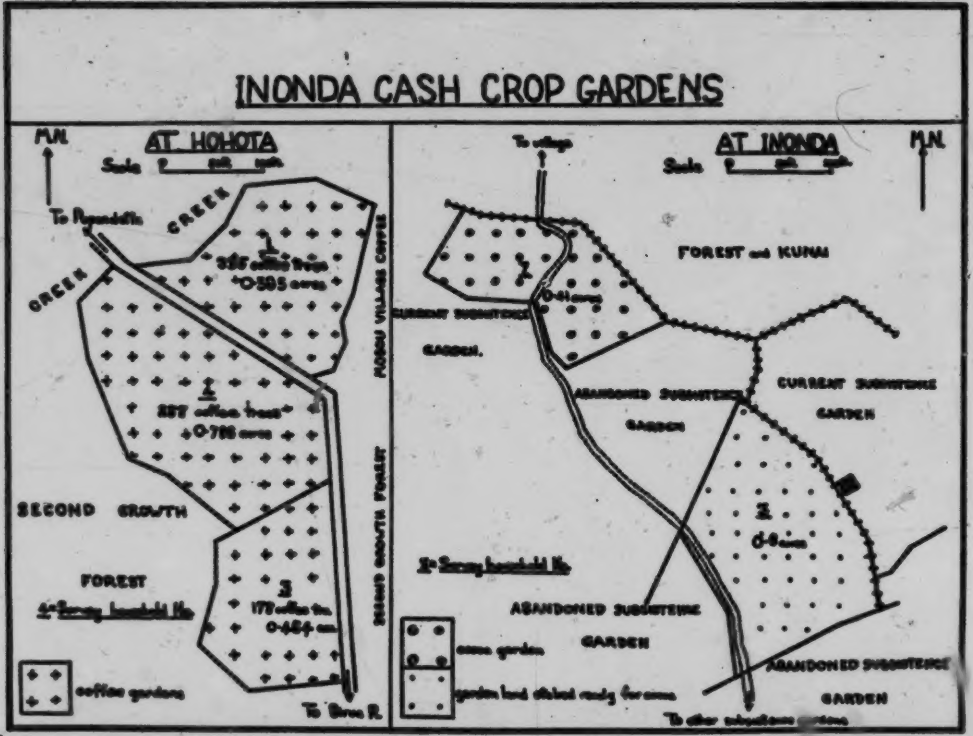
INONDA CASH CROP GARDENS


AT HOHOTA
M.N.
Scale 0
To Popondetta
CREEK
CREEK
1
385 coffee trees
0·385 acres
2
387 coffee trees
0·798 acres
3
178 coffee trs.
0·464 acs.
SECOND GROWTH
FOREST
4 = Survey household No.
coffee gardens
MOSOU VILLAGE COFFEE
SECOND GROWTH FOREST
To Biru R.
AT INONDA
Scale 0
M.N.
To village
2
0·41 acres
FOREST and KUNAI
CURRENT SUBSISTENCE GARDEN.
ABANDONED SUBSISTENCE GARDEN
CURRENT SUBSISTENCE GARDEN
2
0·8 acres
2 = Survey household No.
ABANDONED SUBSISTENCE GARDEN
cocoa garden
garden land staked ready for cocoa
ABANDONED SUBSISTENCE GARDEN
To other subsistence gardens

CONTINUED
FROM
PRECEDING
FICHE

18: Dakeyne K-5 (1962-1964) 1969
OJ23 Orokaiva OJ23
Yega

361
245
137

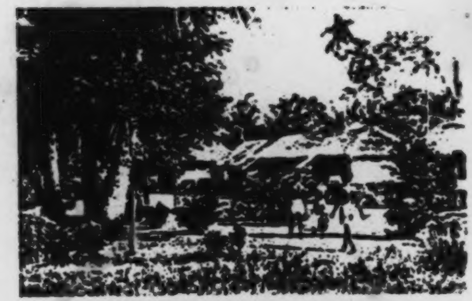


Fig. 10. Scene in Beporo village. In left foreground are coconut palms. The tall slender palms behind the houses produce areca nuts, one of the ingredients of betelnut

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Fig. 11. The new village of Onenda under construction near the cocoa blocks five miles from the coast. (Picture taken in January 1962.)

[P.13-B]

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361
614
491
245
797

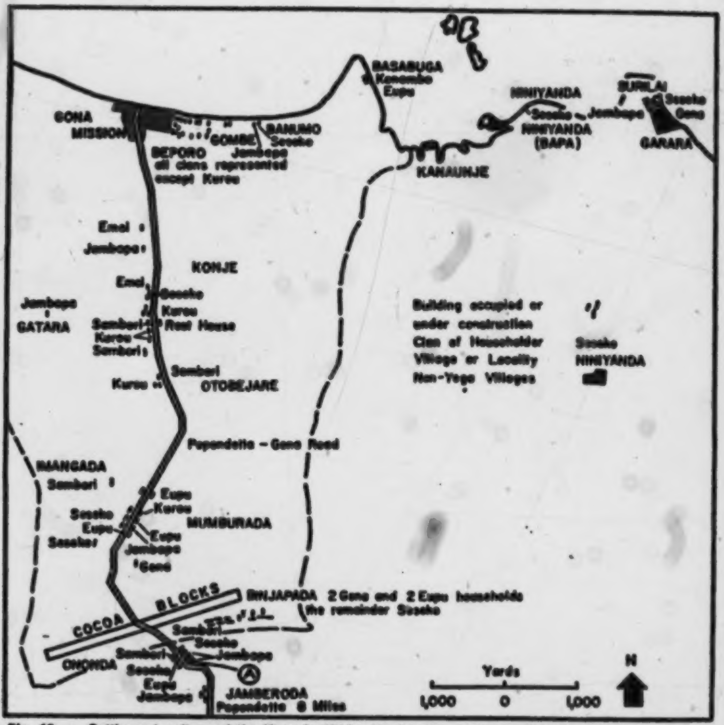
GONA MISSION
BEPORO all clans represented except Kureu
GOMBE
BANUMO
Sesoko
Jambope
BASABUGA
Kanembo
Eupu
NINIYANDA
Sesoko
Jambope
NINIYANDA (BAPA)
SURILAI
Sesoko
Gona
GARARA
KANAUNJE
Emel
Jambope
KONJE
Emel
J. Sesoko
J. Kureu
Jambope
GATARA
Sambori
Rest House
Kureu
Sambori
Sambori
Kureu
OTOBEJARE
Popendetta – Gona Road
IMANGADA
Sambori
Eupu
Kureu
Sesoko
Eupu
Sesoko
MUMBURADA
Eupu
Jambope
Gona
COCOA BLOCKS
BINJAPADA 2 Gona and 2 Eupu households the remainder Sesoko
Sambori
Sesoko
Sambori
Jambope
ONONDA
Sesoko
A
Eupu
Jambope
JAMBERODA
Popendetta 8 Miles
Building occupied or under construction
Clan of Householder Sesoko
Village or Locality NINIYANDA
Non-Yega Villages
Yards
1,000
0
1,000
N

Fig. 12. *Settlement pattern of the Yega in 1964, showing recent dispersal of the population and the break-down of clan-based villages. House marked "A" is ringed in Fig. 11*
[P.14-A)

474 January 1951. The failure of this scheme
emphasises the important role of the individ-
241 ual leader in any innovation in New Guinea.

An important modification to the residen-
474 tial pattern resulted from the Agricultural Co-
operative. Not only was co-operation practised
177 in the gardens but co-operative theory was
571 preached as a Christian ideal in the churches
and taught in the schools and training colleges
797 of the Anglican Mission. The teachers em-
phasised the practical advantages of living in
a large community; for example, co-operative
labour could be easily organized, social clubs
could function more readily and school,
church, and hospital would be more readily
accessible to the majority. Most Yega accepted
361 this view and, during 1953, many of them re-
177 built their houses in a planned rectangular
village, Beporo, close to the mission station
(Figs. 4, 12). Here there was a tendency for the
361 household heads of each clan to group their
dwellings together and to maintain the same
177 inter-clan relationships as had existed in the
571 smaller villages. Nevertheless, there was a
breakdown in the previously tight social con-
614 trol over the location of dwellings. Some men
602 exercised this freedom by building away from
their clansmen but near to their wives' kin and
in some instances even sharing a dwelling with
them.

Since 1960, seven new inland villages have
361 been established along the road leading from
Gona mission to the town of Popondetta. This
movement inland from the coast was initiated
361 by the development of a cocoa-planting pro-
•245 ject which is without doubt the most signifi-
cant change in land use to have occurred yet.
(311) In 1960 the old wartime road between Gona
and Popondetta (actually the last stage of the
[491] Kokoda Trail) was re-opened by the efforts of
[797] the Anglican missionary living at Gona. It
gave access to land at Ononda which in the
opinion of the District Agricultural Officer
(DAO) was suitable for cocoa. As the Yega
245 had previously made enquiries about planting
654 cocoa, the DAO now advised them to clear a
large area of rain forest and plant their cocoa
in a continuous strip, which would then be
sub-divided into individual blocks, rather than
in the small scattered plots which is the usual
pattern of indigenous cash crop plantings.

[P.15-A]

● 245 By a fortuitous circumstance, the land selec-
423 ted was regarded by all Yega as communal
hunting land. It had belonged in the past to
[614] the Bowori clan, but when they were wiped
out in inter-parish warfare it had never been
(726) re-allocated among the remaining clans. No-
body, therefore, had to be compensated for
245 the loss. The Yega followed the DAO's advice
and over the next two years cut down a large
654 area of forest and planted shade trees and
657 young cocoa. In order to supervise this work,
the Agriculture Department built a small
village at Ononda to house a field instructor
and a group of trainees.

245 Many people came to believe that their
433 future prosperity lay in the development of
cash cropping. As the cocoa blocks were a long
361 walk (four miles) from their homes in Beporo
village, many decided to move inland; this
245 was a rational decision. An additional incen-
[484] tive was the development of the weekly market
at Popondetta. With the rapid growth of the
[443] town since 1960 there has been an increasing
361 demand for fresh fruit and vegetables. Many
Yega have taken advantage of this to sell sur-
443 plus produce for cash. Residence in the inland
438 settlements reduces the distance from the mar-
ket. By 1964, over half the population was
living in the new villages.

361 In addition to the dispersal of population,
the breakdown of traditional clan groupings
178 continued. The inland settlements are all
numerically smaller than Beporo and in all of
614 them the old homogeneity of clan membership
has disappeared. A man chose his house site
for convenience and access to his place of
work, rather than on the basis of his kinship
ties.

361 The most radical change occurred in the
establishment of Binjapada village. It is a
collection of fourteen households, spread for
over half a mile, along a narrow strip of grass-
361 land. Six of the occupants had been allocated
cocoa blocks in the near vicinity and four of
423 these men attempted to locate their houses on
the projected extensions of their cocoa blocks;
this represents the beginning of a dispersed
pattern of settlement foreign to the Yega tradi-
tion of clan-based clusters of dwellings. As no
boundary surveys were carried out, one man
located his house on his neighbour's block.
[P. 15-B]

361 He has now cleared bush and planted gardens
423 all round and claims, by right of usage, a much
larger area than was originally allocated to
him. The establishment of freehold title must
reinforce dispersal, so it is significant that in
August 1964 seventeen Yega cocoa-block
holders were among the first people in New
Guinea to apply for freehold title. The parish
elders did not oppose these applications.

Yega expectations in cocoa plantings as a
245 source of cash income have not been fulfilled.
458 The trees began to bear in mid-1964, at a time
when, unfortunately, the world market was
[439] depressed. Growers received only three cents
per pound for wet beans from a European-managed
fermentary near Popondetta; by mid-1965
the price had fallen even lower, to two
245 cents per pound. The discouraging effect of
245 such prices was reflected in the low production
433 of cocoa during the latter half of 1966, when
forty-eight growers produced only 1,866
pounds of wet beans valued at $74.64, an average
of under $2 per head. By January 1967, the
well-cared for plantations of 1964 looked overgrown
and neglected and it was obvious that
apathy had replaced the early enthusiasm.

The Yega cocoa-growing scheme outlined
245 above well illustrates the conflicting traditional
178 and modern socio-economic attitudes commonly
found in New Guinea today. Traditional
245 aspects are:

a) The use of communal labour to clear
178 the rain forest and the subdivision of the area
423 among those who helped.

b) The absence of any documentary record
464 of the transference of cultivation rights to
[476] individuals.

c) The organization of group labour for
certain tasks—individual right-holders to
cocoa blocks were assisted by their kin in tasks
such as cutting grass and opening the cocoa
pods—and the subsequent obligation on the
right-holder to repay such work by sharing his
profits.

d) Personal control by each individual of
the economic trees which he planted on his
block.

245 Aspects which have little precedent in traditional
custom but result rather from the
177 acceptance of new principles are:

a) The systematic layout of blocks.

[P.16-A]

245
177 b) The production of crops specifically for
sale.

c) The acceptance by the indigenes of
[654] supervision and advice from European and
indigenous members of the Agriculture Department:
[657] people with whom they had no
kinship ties.

d) The location of houses on the blocks.

[423] e) The registration, by some individuals,
of freehold title.

245 It is unfortunate that the scheme which
appeared so successful in its early stages should
have failed largely because of circumstances
outside of the people's control.

464 Many Yega have made no attempt to earn
cash from commercial agriculture. From the
[434] time of earliest contact with Europeans some
of them have left home to work for wages. At
[166] the present time, almost one third of them are
absent working, studying, or as dependents.
464 Forty-four per cent of all Yega men are away
working. Those who are married are accompanied
178 in almost every instance by their wives
and children. This situation represents a
592 marked change from the pre-1940 years when
166 many Yega men worked as indentured or
casual labourers and could not take their dependents
with them. Nowadays most Yega
[466] work in semi-skilled or skilled occupations in
which family accommodation is often provided
by employers. Even if accommodation is
not supplied, the breadwinner's earnings are
apparently adequate to provide living quarters
for his wife and children; frequently town
accommodation is of poor standard but evidently
family life is preferred to separation.

871 The main factor in the marked improvement
in skills is education. The educational
178 opportunities which have been available to
the Yega for nearly fifty years have been exceptionally
favourable, when compared with
those of most other New Guineans. A mission
[797] school has operated in the area since 1909;
since 1932 (except for war years) it has had at
least one European teacher permanently on
the staff. This educational background has
[464] enabled the younger generation of Yega men
to take advantage of opportunities for employment
in posts of responsibility and higher income
which have become available in increasing
numbers during the post-war period.

[P16-B]

241 devote less time to the cultivation of the more laborious (but more
311 favoured) Colocasia taro.

During the post-eruption period there have been, as we shall
[433] see below, many pressures on the Orokaiva to reallocate their working time, by raising the standard of village building construction, by taking on outside labour to raise taxes and buy luxuries, by increasing the acreage in cash crops. In many cultures dependent on swidden agriculture these pressures have led to more slipshod methods of cultivation, or smaller plantings or shorter fallowing periods. Among the Orokaiva, the only effect so far has been, in all probability, a decline in the surpluses grown for feasts. This is a change to be discussed later and related to religious changes. In Sivepe there would clearly be a danger, if cash-cropping was expanded to the extent some administration officers would like to see, that fallowing periods in subsistence gardens would need to be shortened. There is no evidence that subsistence gardening, so far, has been affected by cash cropping, as both the acreage and the time devoted to cash crops is too small. (For details of time allocation to activities in both villages, see Table 8.)[A]

● 245 The average Sivepe family, according to Rimoldi, has 62 cultivated trees of local origin from which crops are gathered in season. No corresponding figure is available for Inonda, but it would be about 30. The list of most important trees varies a little between the two districts because of differences of climate and soil.

Sivepe	Inonda
Coconut	Sago
Breadfruit (oga and eumba)	Coconut
Betelnut (areca)	Betelnut
Sago	Hauga nut (tauga)
Pandanus	Breadfruit
Tauga nut (cycas media)	Pandanus
Puga nut (terminalia okaria)	(Ajimo)
Bark cloth tree (ajimo)	
Mango	

An important difference between the resources of the two villages is that coconuts at Inonda will yield copra; hence, a copra drying house was built and this has been and can be a source
[262] of income. At Sivepe, the flesh is thinner and coconuts are grown for drinking, cooking, feeding dogs and chickens, while the nuts are also eaten regularly and form a useful source of protein. Another
249 difference is that neither betelnut nor tauga and puga do well at all in the Inonda district and quantities are negligible. The lack of betelnuts is felt very strongly, as the Inonda people are as
276 fond of chewing it as other Orokaiva. Hence, it is usually obtained

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438 A [See Cat. 116, p. 213--Analyst]

276 from relatives who live in the mountain districts or else obtained
438 by barter, or bought from other villages or at the Popondetta
market.

Sago is made and eaten when other crops fail, but the plants
245 are also used as building material. As the supply of sago is very
[262] limited in both villages, the plants are highly prized. Inonda
people owned only 21 trees so that the bulk of supplies was obtained
from other areas, e.g., from wild sago trees over which they claim
rights. In Sivepe, the total supply is in the vicinity of,
probably, 300. This suffices for the local need, both as an
occasional supplementation of the food supply and for building, when
a great quantity is needed.

The special position of sago among economic trees was shown
[799] clearly in Miss White's description of the building of Sasembata
mission station shortly after the eruption. This was a big project
in which all the surrounding villages (including Sivepe) collaborated.
Labour was given free and so were all building materials--apart
from sago for which payment was expected and made. I was told by
informants this was because sago is a cultivated, not a bush tree.
During my field work period, the mission again needed sago roofing
for expansion and repair of buildings, but this time no payment
was made. However, each household was asked for a contribution of
only two strips of roofing. Thus, it was again treated as a
resource of special value as other materials were not supplied in
such strict rations.

The ajimo tree, used for manufacturing bark cloth was not
reported in Inonda by Crocombe and Hogbin but we did find a small
[287] quantity growing. Though bark cloth is only used for dancing
costumes nowadays, in both villages, these dances still take place
from time to time. The women's clubs have stimulated the production
of painted bark cloth for sale, but this has not led to extra
plantings. Sivepe's supply of ajimo trees was only one or two
for most households, sufficient for an occasional festive garment
with none to spare, but there was an abundance of ajimo in some
other villages in the Sasembata district. Here we may notice a
definite change between the pre-eruption period and the present
at pre-eruption Inonda and because at Pamba, bark cloth was still
the daily wear for everybody, so that the ajimo was an important
economic tree. With this exception, there would seem to have been
no change in the resources of economic trees of local origin.

The three introduced cash crops of significance in the two
241 villages have been rice (pre-eruption), coffee and rubber; in
177 both villages, one man grew a little cocoa. These industries,
which developed in intensive interaction with Australian authorities,
are perhaps better discussed in detail in a later chapter when these
[243] relationships are analysed. Rice plots were developed in the period
between the second world war and the eruption; the plots in both

241 villages had to be abandoned at the time of the eruption and rice
177 growing was never resumed. The growing of rubber by Orokaiva in
the Northern District has a long and somewhat unhappy history which
[243] will be referred to later; at the time of the eruption, just before
the Korean War drove up the prices, the rubber trees planted by
249 the Orokaiva were hardly harvested at all; Rimoldi reports that
311 in 1963 the existing stands at Sivepe were tapped to some extent
and the coagulum sold to a factory at Awala. There were six tappers
177 in his population sample of 50, who together earned $70 in one year.
[434] When I began my field work, the tapping had ceased as the factory
was no longer buying indigenously grown rubber, but a rubber
[474] cooperative was set up early in 1967, with the encouragement of
the Department of Agriculture, in a village about one mile from
Sivepe. The Department of Agriculture was also encouraging the
people to plant superior Malayan rubber trees and two men had
planted 250 and 72 trees respectively. Rimoldi reports that
"members of the clans now represented in Sivepe and Binduta"
owned four plots ranging from less than half an acre to about
three acres in area.

Since that time, however, a new plot has been established,
four and one-half acres in size, on which theoretically seven
men were to establish rubber stands. The Malayan trees were
planted here, as well as self-sown trees from the other plots
which were dug up and replanted. These plantings occurred shortly
after Rimoldi left. If the new cooperative venture succeeds, it
is likely that the new plot--most of which still remains unplanted--
will be exploited, but people were clearly waiting to see whether
sales at attractive prices would eventuate.

Orokaiva coffee plantations are wholly a post-eruption
245 development, inaugurated by the Agriculture Department shortly
177 after it was set up in Popondetta and greatly strengthened by the
311 setting up of a coffee cooperative, first under the Higaturu Local
Government Council and later independently. First plantings in
Sivepe were before 1954, in Inonda in 1955. Rimoldi reported that
in 1964, there were 1,100 coffee trees in Sivepe, owned by five
growers. Crocombe and Hogbin reported 801 trees in Inonda in
1962, owned by three households. Since that time, Inonda has not
added to its plantings, but Sivepe, along with the whole of the
Saiho Division, has greatly increased its cash-cropping activities
[434] since the 1964 census. The number of growers has increased from
five to 14--every able-bodied man in the vigor of life has his
coffee garden from which he derives an annual income of between
$50 and $100. This increase is the result of vigorous encouragement
of plantings by the Agriculture Department, a change of ideology
under the impact of the Local Government Councils and a great
improvement in the marketing arrangements. In 1966, Sivepe coffee
was collected and promptly paid for in Garombi village, about 15
minutes' walk from Sivepe. I did not take another coffee census

245 but would estimate plantings to be about 4,000 trees, occupying
177 an area of eight acres.

Among resources which produce significant current income in
311 Sivepe and Inonda, two other types must be briefly mentioned here,
though they must be more fully discussed elsewhere. Income is
434 earned by men who are normally resident in the villages. When
these men are married and living away from the village with their
167 families, they provide support to the home people on critical
occasions and also, when villagers pay visits to them. I briefly
met a few Sivepe men who settled in Port Moresby and these men
were called upon, during the year of my study, to pay several plane
fares and feed several men who tried their luck in looking for jobs
in Port Moresby.

Secondly, men who return to the village after outside
167 employment are bringing savings into the village which forms a
464 significant source of revenue. Such savings often form part of the
bride-wealth paid by clansmen and it is thus the affines who spend
[583] it. During the year, four Sivepe men went to Port Moresby for
employment and three returned; one Sivepe man took up a job on a
plantation for awhile, largely to pay overdue taxes; a number of
434 men ordinarily working outside came home for short visits. Probably
the most regular income is derived from absentees when the men go
837 out to work by themselves, leaving their wives and children behind
in the village. Six such split families existed in Sivepe; in
613 every case, regular envelopes containing money were posted to the
wife. In the cases I investigated, eight to ten envelopes arrived in a year, each containing $10 and sometimes $20. These envelopes represent a considerable percentage of village income. As long as the money keeps coming, a man knows that his relations will closely watch his wife and will carry out obligations towards his affines; thus, his wife will be kept under strong moral constraint from all sides. It would be cynical to explain the generosity with which men maintain their wives wholly by such motives, but the Orokaiva do regard "looking after" the wives of absentees as a valuable service and the envelopes are thus a form of repayment. "Looking after" the wife and children, indeed, comprises a wide range of services which must be performed by men of the lineage and which are a reasonable charge against the income of a wage earner. As most places of employment in Papua-New Guinea do not provide for married accommodation, we may regard villagers and migrants as engaged in a joint economic enterprise in which each group performs services and obtains benefits.

At the time of the eruption several Sivepe men were working
464 on plantations; today, Sivepe people are interested only in the
better-paid town jobs, mostly in Port Moresby. In Inonda, however, two men often take up short spells of plantation work while a third, trained as a driver by an anthropologist, has a regular government job in Popondetta.

177 the children are principally concerned while some older people are still averse to contacts with medical personnel.

Section 7: Contacts With Chinese

563
439 At the time of the eruption there were, as far as I know, no Chinese in the Northern District. By 1966, five Chinese families had settled in Popondetta, all of them as traders. They had migrated from Rabaul and Lae, where they have trade connections. In the two years or so since their arrival, they developed considerable trade connections among the Papuans. I found that both at Sivepe and Inonda, people preferred to deal at the Chinese shops rather than at the two large established European concerns.

The main reason I was given for this preference was that the Chinese shops offered goods at lower prices. It was certainly true that these shops had a far greater range of low-priced clothing of the type Papuans like to buy. There were, however, other factors. When I had occasion to buy low-priced clothing of the favoured type, I found that the two European stores actually had some rather good stock and that the price was not actually higher. I even found that some lines were more expensive in some of the Chinese shops. This applied particularly to timmed food which the Papuans also bought.

The two European stores were certainly full of goods well beyond the means of the Papuans; when they traded there, they would have to be very careful to pick items of the right sort of price. The main trade of the European shops was with Europeans who put through relatively large orders usually on credit. The Papuan who went there with a few shillings to spend could not help but feel his economic inferiority. In one of the shops, I occasionally saw cartoons displayed which had a racist bias. In the Chinese stores, salesmen were exclusively Papuan and by no means gave preferential treatment to Europeans who went shopping there. Papuans felt much more at ease there. Furthermore, a Papuan who had a regular income or who was known to the owner and grew coffee, could get credit at the Chinese shops.

[245]
[494] One of the Chinese stores introduced several new features in his business. He bought coffee from Orokaiva growers which he sent over to Lae for processing. His price was a little lower than that of the coffee cooperative, but people sold coffee to him nevertheless. Sometimes, the reason was that the cooperative bought only once a month during a scheduled visit to each district, and people might wish to sell at other times. In other cases, the reason was that only members of the cooperative could sell to the cooperative and many small growers were not members (the entrance fee had risen to $16 by 1966). Furthermore, the coffee could be used to pay debts incurred with the Chinese store.

177 part of village layouts, are a blend of Papuan tradition (the Orokaiva
have always been very fond of flowers and planted ornamental shrubs)
[351] and a new Australian-derived passion for military regularity. This
[363] is evident especially in the emphasis placed on building the houses
in a line, and equidistant; the shrubs are also rigidly in line.

The changes are to some extent due to the experience of Ilimo
177 camp which is reflected in the style of Old Sivepe. The changes found
342 in New Sivepe are due to subsequent influences, mainly that of the
Local Government Council. Once village improvement became an ideologically validated objective, the way was open to the adoption of further innovations borrowed from the Kokoda district, such as the use of "timber." I did not see "timber" used East of the Sasembata district.

[182] It may well be that the increase in house size, coupled with the present need to build a large number of houses in the same year to form a major modern village, would rapidly have led to a critical shortage of sago in Sivepe if people had continued to use this material for walls. Thus, the present practice of using timber instead of sago could well have an economic explanation. Sago roofs can be built without destroying the plants, whereas plants have to be cut entirely to produce sago walls. I was not, however, given an economic explanation for the change-over to timber; I was told only that it was better-looking and provided good protection against wind and rain. But nobody would say anything against sago; sago walls are "also very good."

177 Tools and skills: Traditional agriculture has undergone considerable
change, as elsewhere in New Guinea, by the introduction of steel axes,
241 bush knives, grubbers etc. Thus the preparation of the soil for
[412] gardening has been greatly facilitated. There has, however, been no
change in the operations concerned with the plants themselves, planting and harvesting being done with wooden digging sticks. Many of the men have had experience in rubber plantations, with operations such as tapping; there are a few tapping chisels in the village. Training in coffee cultivation occurred after the eruption, but it was not until a few years ago that hulling machines were introduced. Every grower
177 at Sivepe has, as far as I know, only one coffee sack. The basic
skills needed to bring rubber and coffee to market have been mastered,
245 but up-to-date techniques for improving the yield of the trees have
249 not been mastered. The difficulty, in this respect, is not purely one
of communication, as men who have been employed as rubber tappers must be familiar with certain rules regarding care of the trees which are definitely not being practised. Similarly, I doubt whether one can explain failure, on the part of Sivepe growers, to prune their coffee trees by ignorance of pruning techniques. The true explanation would appear to be a lack of confidence that the rules make any difference to the yields. In Hohorita people began to prune their coffee trees when they discovered they were then easier to harvest. But the whole pattern of reasoning upon which Western horticultural practises are

177 based, is alien and seems dubious to Orokaiva. The Europeans claim
245 that a plant needs to be looked after even if it contains no spirit;
249 to the Orokaiva this appears absurd.
Some Orokaiva have been employed by Europeans as carpenters;
[829] these men have certain skills upon which a community draws when large
community buildings (for instance, the hospital at Sasembata mission
177 station) need to be constructed. The trained carpenter leads such
enterprises in the role of expert. There was one such man in Sasembata
335 village; he, like most others of his type, learned his skill in
European employment and not in one of the small adult education
ventures which the administration has sponsored from time to time (the
adult education classes at Ilimo camp were probably the first of this
type).

177 For the rest, the skills acquired by Orokaiva over the last 15
years are largely concerned not directly with village development but
871 rather with an increase of understanding of the world outside. While
before the war, only a small minority had school education, the
Anglican Mission spread its operations to several new stations,
including Sasembata, after the war. After the eruption, the scope of
education was again greatly extended and it could be said that the
eruption marked the beginning of universal school education in the
majority of Orokaiva villages. The Sasembata station began to draw
virtually the entire child population of the surrounding villages,
and most students now follow a five or six year course. While this
development had been planned ever since the war, it may be significant
that regular school attendance of all the villages in the district
was experienced for the first time at Ilimo, where a school was
conducted for the whole evacuee child population, and adult classes
as well. It is the objective of present school programmes, as far
as I can see, to make the population literate and the increase of
[212] literacy is a major aspect of acculturation over the period. Literacy
has certainly progressed to a point where letters written in Orokaiva
to any family in Sivepe can be read and understood with the help of
at least a junior member of the family; and can be replied to. While
177 I could see no evidence that people have acquired mathematical knowledge
802 of any sophistication, I was struck by a strong quantitative orientation.
In the Orokaiva language, there are no numerals higher than 2; hence,
it is the invariable practise to use English numerals when speaking
[192] the Orokaiva language. The numerals are, in fact, among the main
English linquistic features that have been borrowed. They are used
with remarkable frequency; the number of coffee trees, the value in
pounds of trade goods included in a bride price, the calculation of
money prices, even the number of brothers or men who together played
some role in a mythological tale (a distinctly contemporary touch,
this)--all these phenomena show that "numbers" have become an integral
part of Orokaiva culture. The Orokaiva use the English word "number"
177 for a variety of quantitative concepts, including price. Finally, one
829 must regard as an aspect of acculturation, the introduction of many

471 well as cash crops. The clan or village has overriding rights to the
product only when a feast is being held; at such a time, people are
encouraged to make extra plantings and are expected to donate what
has been grown in excess to their own requirements. Such donations
are represented as "voluntary" by informants.

471 The second type of organisation is that brought about by the
Australian government's insistence on the planting of village quota's
241 of rubber and coconut. Here, as I explained, an undivided area was
621 planted by "all" members of the community, and the product appropriated
by individuals on a sort of roster system. The land remains owned
by the individual who made it available and it will revert to him
when the trees die off. It is only the trees that are "communally"
owned. There is no traditional precedent for this kind of arrangement.

The third type is that described on the preceding page. For
471 this system, the selected plot of land is divided into sections called
241 *tana*. This is common procedure also when subsistence crops are planted.
Each *tana* is then *lent* to a person who will plant coffee or rubber
427 there. This lending of *tana* is likewise traditional; a man described
how his sister, after a quarrel, came back to Sivepe (she had married
out) and he at once gave her a *taua* from his new garden to look after.
The only difference, in the case of tree crops, is that the *tana*
is lent out for a longer period, in fact as long as the borrower
continues to harvest the trees (regularly). No new "communal" coffee
plots of this sort have been established in Sivepe for many years;
there was, however, such a plot allocated to rubber around 1964, as
I have described. It was called a "company" and the agricultural
officer told me that the government did not like supporting these
"companies," preferring development of "individual holdings."

474 In the neighbouring village of Sasembata, where a rubber cooperative
was set up, a new variant developed in 1967. This was also called
245 a "company;" its main asset was a small factory for processing the
rubber. The "company" was also allocated a plot of land, owned by
a village man, where trees were planted by a work group, with the
intention of tapping and selling the rubber *for the benefit of the
company*--there was some talk of saving up for a truck to cart the
rubber and other village products. In addition, villagers planted
trees on their individual land and rubber harvested from that land
would be processed at the factory and proceeds would go to the grower.
This scheme met with some sturdy opposition from the agricultural
officer. The fear of the administration was always: cargo cults,
communism, fraudulent accounting. Four Sivepe men were actively
occupied for some weeks on helping to build the rubber factory. They
also contributed $10 membership fee. Members were drawn from all
villages closely related to Sasembata.

474 Cooperative principles were also not infrequently followed
in the setting up of trade stores. Rimoldi (1963) reported one such
443 venture, involving 11 villages and centred on the Sasembata mission
station. The savings seem to have totalled $60 from each of 12 clans,

657 maternal relatives. Moreover, the fact that these groups have a clan
731 name in common implies very much less than that they have rights in
each other's land. They have rights to be protected and succoured as
423 brothers in times of war, starvation or other emergencies, but rights
in land cannot be established on that basis.

The government sometimes went to considerable trouble to give
supposedly secure land tenure to those who agreed to stay in the
resettlement villages. I have already stressed that in such cases one
cannot speak of "clan land" being made available to the immigrants,
because all Orokaiva land is owned by individual extended families.
[426] In such cases, individuals lend pieces of land to immigrants who are
allowed to cultivate them on a year-to-year basis. Their usehold
lapses when they leave the community. It goes without saying that
where this land is used by the techniques of shifting agriculture, a
man cannot depend on the land resources of his new village unless he
gets enough land to make about eight gardens in eight successive years.
Plant estimated immigrants' needs at five acres per person and this
is a good deal of land. I know of several cases where land was lent
to people who needed some. The pieces transferred usually measured
at the most one or two acres--enough, to be sure, for subsistence over
a short term but no more. The effect of this is not to make life
in the new village impossible but to hold the immigrant in a position
of dependence on landholders. Understandable, the immigrants make
every effort, after resettlement, to cultivate their own land, even
if it is situated some distance away. Once they begin to do this,
the temptation to build a village near their home gardens is very
strong. According to Orokaiva ideas, the immigrants lose all rights
over land which has been lent to them by their hosts as soon as they
stop residing in the village where the land is. Thus, as soon as
people decide to leave a resettlement village, they lose any rights
in it that their hosts may have given them, if Orokaiva legal principles
are followed.

I shall illustrate these principles in one concrete instance,
the resettlement village of Mumuni, situated between Sasembata and
Waseta, and I shall show how the government attempted to improve the
land tenure position of resettled groups. After the eruption, the
people of Dapari were persuaded to settle in Mumuni, which was intended
[425] as one of the new style resettlement villages. They were given some
land to cultivate and stayed for several years. When the government
[245] began to encourage the planting of coffee trees, the Dapari immigrants
planted coffee gardens at Mumuni. Under Orokaiva law, it is permissible
[426] to plant trees on borrowed land provided the owner consents and the
produce from that tree will then always belong to the planter, even
[422] when the land as such reverts to the owner. One frequently sees a
betelnut palm or a breadfruit tree which is owned by a person who at
one time borrowed the land and which is harvested by the planter and
left undisturbed by the owner of the land.

657 It is a ticklish question whether this rule similarly applies
to coffee trees which differ from the traditional kind of trees in
731 two ways: first, in that they occupy the whole of a piece of land and
423 not just a few square feet of it and secondly, in that they are a
source of cash income. The government was aware, from the beginning
245 of the coffee scheme, that traditional Orokaiva law might be inadequate to protect coffee growers but balked before the huge task of giving all Orokaiva a legally registered title to their land. If this were to be done according to the principles of Australian law, it would involve expensive surveys, endless litigation and cost many times the value of the land, even if qualified personnel could be found to do the work. The Northern District administration therefore hit upon an ingenious dodge, by which the Higaturu Local Government Council, after summary investigation, issued declarations allotting land to persons who wished to plant cash crops. These declarations, made and witnessed by the clan elders, allotted the land to the grower in perpetuity. (For details see Crocombe and Hogbin, 1963: 89 f.) The practice of issuing these declarations was soon stopped by the authorities in Port Moresby who ruled that they have no legal validity, but Mumuni is one place where they were issued.

657 After planting their coffee at Mumuni, the Dapari people began
to depend for their subsistence gardens on land they owned in their
731 own natal district, which was an' hour or so from Mumuni. All the
423 Dapari people, except for the Jegase clan group of Dapari, went back
to their natal district to build a new village; the Jegase clan group
578 was the only one to stay behind at Mumuni. Their position was more
628 favourable, as they owned land near Mumuni; hence they had no reason
to go back to Dapari. I met these Jegase people when they visited Sivepe to receive brideprice. They told me then that one Mumuni man had made a large gift of land on which all the Dapari people grew their coffee. The Jegase group was growing coffee there without being disturbed by anyone, nor were they ever asked for payment. On the other hand, the owner wanted his land back from those Dapari people who had left to build their own village. But this group insisted on holding on to their coffee plantation; they stayed at Dapari and had subsistence gardens there, but they returned to Mumuni from time to time to look after their coffee. They claimed they were entitled to do this because they had been registered as owners in the Higaturu Council declarations. Thus a conflict developed, in which Mumuni relied on traditional custom whereas Dapari relied on a (legally invalid) kind of certificate of title. In this quarrel, the government could do little except hope it would blow over.

A New Zealand geographer, Mr. Peter Aitkins, who made a study of this area (unpublished), told me that the Mumuni people had begun harvesting coffee from the Dapari-planted plots. My own investigation showed that nothing was ever stolen from the Jegase clan group (who had not left Mumuni) and that Dapari had offered to sell the coffee stands to the Mumuni owner of the land, and that the owner was prepared

621 another source of annoyance. Some village groups requested permission
to move from Koipa and this was granted. A report on the file refers
657 to the clearing of new gardens South of Koipa (end 1956), but in
731 May, 1959, we read that these persons who left Koipa had "over the
last 18 months split into two groups one of which settled at Bagevaturu
and the other at Kiorota." The villages had been laid out (according
to "modern" principles, as I myself observed), gardens and garden
houses established, coffee planted. Government supervision over these
movements was much less strict than it had been in 1951, though
strictly the village sites ought to have been approved before the
villages were built.

This second phase of resettlement became possible because the
657 first phase was not accompanied by any renunciation of land rights,
731 or foreclosure of the possibility of return. At no time did the
resettled groups give to anyone else a permission to occupy vacated
423 lands nor accept payment for any of their land or its products. After
this second resettlement, however, one substantial land tenure problem
245 remained. The nature of this problem is the second lesson to be
drawn from the example of Depari tenure described above. The traditional
Orokaiva land tenure system is not well-adapted to cash cropping.
The Depari people are likely to lose their coffee plantations as a
result of tenure difficulties. Likewise, Crocombe and Hogbin believe
that the failure of several Inonda families to plant coffee is due to
tenure difficulties. The Inonda families who did plant coffee were
careful not to do so on the extensive land holdings which they inherited
from maternal relatives because they feared claims that might otherwise
[928] be made by maternal kin. The fact is that a large proportion of
Orokaiva land is held on a legal basis much more complex than patrilineal inheritance. When an Orokaiva holds land he has inherited from his father, both he and his father having continuously resided on the land, that man is indisputably the owner and he can grow coffee or rubber on that land without fear of interference. We have already seen that no Inonda land is held in this way. In Sivepe, most men have some land of which they are indisputably the owners, but at the same time most of them also have useholds over many pieces owned by maternal kin or affines or absent agnates. They are "looking after" this land, and the true owners never trouble them as they either have their own usehold lands in the villages where they live or are working in towns or on plantations.

These circumstances change as soon as cash-producing trees begin to be grown. It is then that claims begin to be asserted and Orokaiva customary law has no way of dealing with such claims. The owner is certainly entitled to a share of the proceeds, and the size of that share is dangerously indefinite.

Inquiry in Sivepe showed that the people were well aware of the danger. All but two coffee growers had planted on land inherited from their fathers, preferring to use their other lands for subsistence crops. One of these two exceptions was the Seho clan chief who had

657 planted coffee on his mother's brother's land. He explained to me
731 that this mother's brother was dead and nobody except himself [illegible]
any claims on the land. The second man, who had planted on his wife's
423 land, was not so fortunate. His wife's relatives live in Sivepe and
lost no time asking for the return of "their" land as soon as the
245 coffee was harvestable. He settled for a compromise: he planted
coffee on some of his other land and promised his affines they could
have their land back as soon as his new trees began to bear. As far
as I could discover, this was agreed to.

423 It has been argued by several students, especially Crocombe and Hogbin, that title improvement is a necessary requirement for the success of cash cropping in the Northern District. My own findings suggest that the importance of title improvement varies a good deal between villages. Where, as in Sivepe, a fair amount of land is held under an undisputed title, no great gain in productivity can be expected from the formal registration of these good titles. In other places, such as Inonda, it is of course essential.

Crocombe and Hogbin (1963: 89-93) have described some early attempts to register Orokaiva titles under some scheme administered by the Higaturu Local Government Council; after describing several rules passed by the council for this purpose, each of which was in operation for a short period and then rejected by Port Moresby officials, the authors conclude: "Registration is of doubtful validity, but to the extent that the Orokaiva accept it as binding (and they appear to do so unreservedly at present) it functions in practice." The example I have given of the dispute at Mumuni shows clearly the disadvantage of all such informal registration procedures. If the Dapari people were to lay an information with the police that Mumuni is stealing their coffee, could any judicial officer convict any person from Mumuni of theft and send him to prison? I cannot imagine that Crocombe and Hogbin would applaud such action.

The government made a fresh approach to the problems of indigenous
657 land tenure with the passing of the Land Titles Commission Ordinance
423 1962, the Land (Tenure Conversion) Ordinance 1964, and their amendments.
Under these provisions a Land Titles Commissioner has been appointed
at Popondetta whose task it is to determine the land titles in
specifically designated "adjudication areas." The Commission prepares
an adjudication record showing what land in the adjudication area is
native land and the ownership of each piece of that land. A native
may then apply for registration in his name of any native land included
in the record by agreement, but no titles can be reigstered in a piece
of land which is less in either area of frontage than the standard
prescribed for the purpose for which the land is likely to be used.
In practice, this has meant that every individual holding registered
by the Commission should have a minimum area of 20 acres.

The operation of this system, and its difficulties, may be instanced from my observation of an attempt to apply it in Hohorita in 1966. Hohorita is a resettlement village harbouring some 12 clans;

731 the resettlement villages as needed, but soon replaced by issues of
657 the sweet potatoes and later, village-grown crops. Distributions
tapered off after May, 1951, and ceased at the end of that year.
Commercial Enterprises: Agricultural activities are the only kind of
enterprise which are encouraged or assisted by government. These
activities are mostly conducted by individual entrepreneurs. No
rewards are never given for land clearing, nor are any labour costs ever
paid. The government assists by providing coffee, rubber and cocoa
seeds to growers. Initially these were free; nowadays, growers are
charged the cost of seed.
Although there is provision in the Territory for credit assistance
452 for economic development, small growers of cash crops such as are
657 found in Sivepe and Inonda are not eligible for this credit. A short
time before I left, one man from Inonda (again the government driver)
was encouraged to apply for a loan under a new experimental scheme
for beef cattle farming, but the arrangements were not complete when
I left.
The government provides marketing assistance to New Guinea
●245 growers of coffee (mainly indigenous) by a remission of duty on raw
652 coffee imported into Australia from sources other than Papua and New
Guinea to each importer who obtains a certain percentage of his total
requirements from the Territory. The government does not itself
245 purchasecoffee but when the Higaturu Local Government Council was
474 formed one of its initial functions was to operate a cooperative for
the purchase, processing and exporting of locally grown coffee. Later
[651] (in 1962), the Council withdrew from this activity and an independent
Orokaiva Coffee Growers Society was formed. The reason for the Council's
withdrawal was advice from the government which felt uneasy about local
bodies engaging in commerical activities. The effect of the setting
up of the cooperative has been that service is now no longer given to
all growers but to all who have bought shares as an entrance fee and
become members of the cooperative. This fee was initially $4 but is
constantly rising until in 1966 it reached $20. Some non-members sold
[439] their coffee to the Chinese for a lower price; others sold through
kinsmen who were members, and did not always receive the full proceeds.
The government keeps an eye on the operations of the cooperative; in
any case, it seemed well enough conducted. Until end 1966, the cooperative
depended on the government for transport: the buyer who visited villages
each month to collect and pay for the coffee travelled on a government
truck. It is now buying trucks of its own. The nearest pick-up
point for Sivepe coffee was Garombi, one mile away; the nearest pick-up
point for Inonda coffee was likewise one mile away, at Ajoro.
The government also assists agriculture through its research
654 activities conducted in various experimental stations in the Territory
292 which specialise in rubber, coffee and other relevant crops. A
resources survey has been made of large parts of the Northern District,
including the Oro-Bay--Kumusi River region with which we are concerned
here. A programme for the improvement of Robusta coffee is on the way,

654 and local field trials are being carried out on the volcanic soils
of the Northern District.

242 Agricultural extension work was being carried on by Australian
officers stationed in Popondetta, with the help of Papuan agricultural
242 assistants some of whom were stationed in a sub-office in Saiho. It
is this staff which has been responsible for the gradual increase in
coffee plantings and the spreading of basic knowledge about coffee
cultivation. We should not, however, minimise the extent of knowledge
and stimulus that spread not through the activities of officials but
was passed on from experienced Orokaiva growers to beginners. Furthermore,
many persons trained as agricultural assistants have returned to their
villages and became a fund of knowledge to those around them. The
assistants are trained in a course of between nine and twelve
[874] months' duration, given at Popondetta. Papuans may also receive a full
agricultural diploma course at a school near Keravat, New Britain, or
a two-year sub-diploma course at a school near Keravat, New Britain,
or a two-year sub-diploma certificate course given at Popondetta.
Graduates from these schools were not yet working in the Northern
District at the time of my visit.

No stabilisation fund for coffee exists in the Territory. The
435 violent fluctuations in price for this product do have a somewhat
unsettling effect on growers, though I could not observe very much of
245 this as 1966-67 was a good year. I heard that in bad years in the near
past people had been very disappointed. The problem of price fluctua-
tions affects other tropical crops as well, and New Guinea has few
sources of income which are significantly stabler than coffee. Therefore,
no easy solution to this problem is possible. The Orokaiva Coffee
Growers Society has been following a wise policy of withholding a
substantial part of the proceeds in good years for capital improvement,
thus providing a kind of cushion against fluctuations. Thus, in
1966-67, a substantial proportion of proceeds was withheld for improve-
ments to the factory and trucks. Growers are paid an initial sum
per pound substantially lower than the expected total proceeds, and
the balance is in part distributed to shareholders at the end of the
season, in part withheld. By this procedure, a substantial drop in
export prices can be suffered without corresponding lowering of the
initial cash payment. In 1966, the cash payment was $26 for a 150-
pound sack.

A good deal of development work has been left for the Higaturu
657 Council to deal with. I have already mentioned that government officers
423 attempted to have the council deal with matters of land tenure improve-
ment (though Port Moresby authorities overruled this) and that the
coffee factory was planned as a council operation though again plans
were changed later. In 1966, the main activities of the council were
653 in the building of roads, the improvement of water supplies, the building
of medical aid posts, the maintaining of the produce markets at
Popondetta and Saiho and someminor social services. (For details,
see Table 12.)[A] Thus, a sizeable area of local development had become

[A] [See Cat. 116, p. 217--Analyst]

871 government driver) had gone there and continued at Martyr's school at
Sangara. He survived because the mountain erupted during the school
holidays. At Sivepe, some children had started going to the Jasembata
school, opened in 1945, but attendance was irregular. Nonetheless,
there were few people under 30 in 1966, who had not had some schooling.

177 Goods such as meat, sugar, tobacco were known in Sivepe at the
time of the eruption, and bought in trade stores; some people used
[262] European pots and others used clay pots. By 1966, all regular production
of clay pots in Sivepe had ended; they were not even included ceremonially
[263] in bridewealth. It was always the young men, away on labouring jobs,
who introduced the innovations in material culture, who brought their
[276] mothers and new wives European pots, who came home flaunting European
[415] clothes, who first used nails in building their houses. In Inonda, at
the time of the eruption, the young men were already wearing "trousers";
[291] in Sivepe, this came later, at the time of the local government council.
In both villages, this same association was stressed: the European
cloths were accepted for village wear at the time the council started
and the example was set not only by the bachelors returning from town but
also by the councillors themselves. There was a councillor resident
in both villages in the years immediately following 1956; it was their
influence that tipped the balance in dress innovation.

At the time of the eruption, cash cropping had not yet started
245 at all in Sivepe, but at Inonda, one man (the father of the present
177 government driver) was already selling coffee for which he was paid
$3 per bag by the government. The government also bought copra from
him which he prepared by breaking up coconuts and drying them in a
fire. He stopped this trade at the time of the eruption but resumed
in 1954. In Sivepe, coffee growing started in 1956 on two "company"
plots. It was in other words a community activity rather than a case
of individual entrepreneurship. Rimoldi (1966: 84) reports that
individual coffee gardens started in 1957 only after patrol officers
advised against having jointly operated ones.

191 It is not easy to say just how much linguistic knowledge had
been absorbed before the eruption, or even now. If one asks a man
what languages he knows, he lists all those he has had contact with
on his travels; always Motu, not infrequently Pidgin, and also often
an assortment of New Guinea languages marking the spots where he has
worked. Wherever a man works, he learns some of the language, but
his knowledge rarely passes exacting tests. Orokaiva men who said
they knew Aiga could not actually translate the Aiga texts I taped
into Orokaiva. It would be most interesting to do research on the
actual knowledge of these Papuan polyglots. In a country where so
many languages are spoken, communication between persons with different
177 vernacular is a crucial process. There is no doubt that travelling
Orokaiva make a great effort to adapt themselves to the regions they
visit. If they have personal contact with their employers, they learn
a great deal from them too. From the data I have presented it is plain
that travel has been the major acculturative influence among the Orokaiva.

621 station. The Horeopa leader, who was the owner of this land, then
invited these other clans to come over and make Hohorita into one
361 united big village. When the clans came over in 1959, they followed
the same pattern as the Sorovi immigrants followed in Sivepe: they
arranged their houses so as to maintain, in a subtle but unmistakable
way, their own identity. They formed in effect a second rectangle
which formed a harmonious continuation of the first rectangle but which
was separated by just half a chain. In 1966, the front and the back
half of Hohorita held separate feasts, each inviting a different
village. In 1967, the councillor made plans to clear the gap between
the two halves, remove the two old houses which emphasised the separation
and build new houses in the cleared area to join the rows together.

Around this time, the Sombou people began to establish themselves
in Hohorita, leaving their old village behind. I think it was they
[764] who filled the gap between the rows. The councillor had long been at
pains to close down the small villages of Sombou and Kakita and Sombou
[775] was finally persuaded after the death of an old migrant who had remained
a pagan. As he could not be buried in the Christian cemetery, and
people did not feel disposed to carry out the full involved ritual to
placate the ghost, they preferred to shift their village. (They thought
that pagan ghosts are far more dangerous than Christian ones.)

361 Hohorita, like most resettlement villages, lies along the main
road to Popondetta, 11 miles from Popondetta, seven miles from Saiho
368 hospital, three miles from the Higaturu Council chambers. The school,
conducted by the mission on Hohorita station, offers an education to
the end of Standard 3.

621 The two feasts held in 1966 were intended to introduce into
Hohorita the pigless era advocated by all councillors. I arrived a
433 month or two after the feasts and by that time two very small pigs had
434 appeared which were there for a special reason I have forgotten.
Sombou and Kakita still had a normal complement of pigs. Coffee was
[231] a somewhat bigger enterprise in Hohorita than at Sivepe. The trees
were much better looked after, and there were far more of them. Every
[245] man had his coffee garden and an income of $100 per annum from coffee
was normal. Young trees were also being planted at a much faster rate.
[166] Compared to Sivepe, there were very few wives whose husbands were
permanently away working. The reason for this was that there are a
number of plantations quite close to Hohorita and those who needed
to work to pay off bridewealth, etc., could do so without going too
far afield. Money to pay taxes and other regular outgoing expenses
464 would come from coffee. Men who were able to find skilled jobs,
clerical or professional work usually had their wives with them. An
167 important resource of Hohorita, not shared by Sivepe, is the availability of good jobs within a reasonable distance; the fact that Hohorita
families do not break up in the same way as Sivepe ones indicates that
such separation is probably economically motivated. It is necessary
for a young man to earn his trophies, so to speak, which in the modern
world means money, but if he can do it without a prolonged absence
from home, he prefers staying home.

Orokaiva marriage (Schwimmer, 1970) and have shown that 582
sister-exchange marriage, though infrequent, is regarded as the [114]
ideal form. Elopement and abduction marriages, once the most [583]
frequent, are now frowned upon, though elopement is still prevalent. The patrilateral preference rule (marrying out a girl in her mother's village) is still regularly stated by informants. In my records, which go back to the third generation, I found that 35% of the resident married women had been married out by that rule for the whole three generations, i.e., they had been exchanged for their mothers and their mothers for their grandmothers.

In the study [3] that follows, I shall first present data concerning the coconut and areca, then about the taro. I shall follow this presentation with a brief discussion about the relation between the levels of myth and ritual. 128

1. COCONUT AND ARECA

A salient characteristic of the ethnobotany of the Orokaiva is 824
the classification of plants as masculine and feminine. Certain [241]
important cultivars are grouped together as opposite-sex couples and grown in close association with one another. Claims are made that such plants will not prosper unless they are planted close together and that, in their wild state, they are also found together.

The symbolic association of these pairs of plants may be based on a number of shared characteristics: the similar outward appearance of the fruit, a coincidence in the time of fruiting, and similarities in culinary use, taste, and supposed physiological effects of the fruit when eaten. Sometimes the pairs of plants are linked in ritual use and in a common myth.

Coconut and areca are planted together in villages as well 262
as gardens. Both nuts are eaten raw between meals; both grow [245]
on palms; both are offered to visitors—the coconut as refresh- [574]
ment immediately upon arrival and the areca (along with *hingi*
pepper and lime) for chewing during the conversation. At mor- [764]
tuary feasts coconut and areca are the principal gifts, offered in large quantities to guests from villages who helped to bury

do look like a girl's breasts; they are very dangerous if one falls 539
upon them with any force. His sister was clearly an *embavo*, a 824
coconut spirit. In this way the deaths are, to Orokaiva thought,
adequately accounted for.

The hero explains two types of ritual uses of coconut and
areca, namely, those related to mortuary feasts and those where
the sex of the recipient of the nuts is opposite to that of the
donor. The instruction that nobody should eat the nuts lying [768]
under the trees, on pain of death, constitutes a mythological
charter for the taboo placed upon the coco palms and areca
palms owned by a person recently dead. An informant explained [764]
a further implication to me, which is not very clear from the
version I quoted, namely, that it is customary to place coconuts
and areca nuts upon the grave of a dead affine. Thus it was the
duty of the hero to place coconuts and areca nuts upon the
grave of his brother-in-law; and the duty of his wife, to do the
same for the grave of her sister-in-law. In order to clarify these
points, the myth tells of the wife's desire to eat the nuts and the
hero's refusal to let her have them.

In a somewhat elliptic manner, the hero lists or implies three sets of rules concerning gifts of coconut and areca, where the sex of the recipient of the nuts is opposite to that of the donor. The sets are:

Areca	*Coconut*
1a. The man fetches the nuts from the tree.	1b. The woman *helps to fetch* the nuts from the tree.
2a. The man gives the nuts to the woman.	2b. The woman cooks the nuts for the man.
3a. The girl offers nuts to her lover and carries an offering of nuts at initiation.	3b. At a girl's initiation, a man prepares coconut oil, which is used as a ritual cosmetic.

The first opposition is made quite explicit in the hero's
speech, but is not free from casuistry. Men usually fetch not [245]
only areca but also coconuts from the high palms on which they [462]

grow. The woman may help by collecting coconuts once they 539
have dropped on the ground and by carrying them home. Very 824
often, however, the coconuts are carried by men, who tie two
nuts to a stalk, thus creating a huge effigy of a phallus. The [245]
feeble empirical basis of this opposition only serves to empha- [462]
size that we are here being taught an ideology which requires
the opposition.

The hero's second opposition centers on the culinary use made of the nuts. Areca has no place in the kitchen, in opposition to coconut. The fact that coconut is also often eaten raw would weaken the opposition but is suppressed. The third opposition is in fact the strongest, but it is stated in a rather elliptical manner. We are told that in ritual girls give areca to men, but the opposite statement is omitted, viz., that in the same initiatory context *men* (but never women) pour coconut oil over girls.

In the narrator's mind all these oppositions are probably subordinate to a philosophical question: why the Orokaiva consider coconut masculine, areca feminine. Numerous informants have confirmed this classification in conversations with me. In this story, however, it is not presented as a "fact," but it is deduced in a logical manner. The words used make it clear that we have to do with a logical deduction:

> *Ainge* embo amina ainge ena. Embo amina *ainge eto*, erevi u ra embo erevi u ra; te sa erevi meni kakara ra;— *ainge eto* ikena.

This passage, translated above, contains the notion of logical entailment three times: *because* the girl gives coconut to the man, it *therefore* belongs to the man; *because* coconut belongs to a man, *therefore* coconut is masculine; *because* areca is a girl, girls give areca. The problem, for those who do not know Orokaiva culture, is that every one of the conclusions appears to lack logical force. Furthermore, it will be noticed that, from a formal viewpoint, the narrator's argument proceeds quite differently for men and for girls. This difference also needs explanation.

435 the latter. Also, migrants normally leave behind a family member
436 with the task of looking after the land (*simbari*) in a technical,
magical and juridical sense. Often he also leaves behind a wife for
167 whom he is saving brideprice but who meanwhile must be looked
after by his relatives. Money sent home therefore covers not only
feasting contributions but also the function of *simbari*. This is
not because village people would not perform such services free
of charge but because, when a man earns money, those who help
him earn that money are entitled to their share.

169 If we look only at the relations of production migrants have in
their jobs, they seem totally 'alienated' (cf. Parkin, this volume).
461 Not only have they no control whatever over the product of their
labour but this product lies entirely outside their conceptual
[571] universe. Yet these migrants avoid proletarianization in the full
sense because they continue to have a stake in the village
environment, which has its own economic, political and ideological
base.

435 Our remarks above apply similarly to the village cash-crop sector.
With the exception of coconuts, the use value Orokaiva see in
European cash-crops is either very limited or non-existent. Coffee
and cocoa are classified as non-foods, rubber latex as an unusable
substance. Even the coconut, though an important food when
fresh, represents no use value to Orokaiva when dried into copra.

This lack of perceived utility has not stopped cultivation of
these crops on village land nor their processing by village-purchased
● [245] machinery. Everyone irrespective of age is growing coffee. Those
who are pressed for time tend to give priority to coffee and to
partially replace their plantings of taro with 'German taro' –
less valued but less laborious.[21]

245 Growing coffee is not considered pleasurable like growing taro.
When suggesting to an informant that coffee trees have a sweet smell,
824 I was firmly told: "*We* think the smell is dreadful". Such feelings
go to show that the division between the spheres of use value and
461 exchange value is not purely analytical but corresponds to a conceptual
boundary between two models of life and work, and that
Orokaiva try to keep this boundary clear. Coffee is grown because
it takes far less time than it would to grow subsistence crops for
the market, but the grower feels alienated from it while he feels
[438] identified with the subsistence crops. A small quantity of subsistence
crops – surplus to requirements – is in fact sold in local markets
for consumption by local people, but growers take the same care
with them and regard them in the same way as the food they eat.

461 It is paradoxical that the work represented as introduced by Jesus
[177]

121 13. This method of setting up semiotic domains for study is probably due to Lévi-Strauss, long before it became canonized as part of the science of semiotics (Eco 1972). See also Schwimmer (1977a), for an Orokaiva example.

14. The term 'manager' instead of the tedious 'big man' is due to Burridge (1969) and is heartily recommended to practitioners.

114 15. I briefly analyzed Williams' Kutubu study (Williams 1976), but missed the full implications of the myth cycle reported by Williams. A reareanalysis of that work, with full use of the myths, is overdue.

16. See for a first analysis Schwimmer (1973), later supplemented by Schwimmer (1974a) (coconut, areca and taro) and (1979a) (pigs).

551 17. A discussion of work specialization among Orokaiva (of which there is
577 but little) will be found in Schwimmer (1967). An interesting type of
specialist not so far described is the expert body decorator (Schwimmer
305 1973: 177, 185) to whom the ritual payment of a pig is due when he
officiates, and who appears to officiate regularly at initiations.

114 18. For a full discussion of the concepts involved see Schwimmer (1979a).

19. The text: "*Umo meni ingesoa, eti atimbasoa, i umbasoa, umo timbasoa;*
793 *donda deire tapa amo aisi oa eto tunga osaga umbasoa.' Ainge ena.*
Ainge ivu ta ena: 'Adam, umo ainge hogoro umbasoa, andage aisi oa
177 *eto i gaipi oa, pure jirembasi oa; iji vevere tunga osago hamo memega re*
tapa pure gaiha aisi oa.' Ainge ena. Ainge eto ikena avo embo Eave te
539 *Adam te ainge ena: 'Ainge dombo dago tapa endata emo ainge do aisi*
uje oegora: pure te deire amo tapa hamo memega te tunga osaga te tapa
pamone ainge ga eerora, dago embo ainge hamo memega te tunga osaga te
tapa pure gaiha avo eerora. Eto donda matu nunuga ena avo indie
irsetera avo. Aravorate, ungo kiaekiae eto God na taekena avo umbuto
india. Aravo embo eto avo God ena: 'Avo iji koso ami tunga osaga iji
tunga osaga aisi ova, ainge tunga javatoho iji amo tunga javatoho aisi
ova.' Ainge ena. Avo embo dago tapa emo oroho emite ue irora."
Robert, Sivepe, 1966.

694 20. The text: "*Embo handa pirisi embo na punduto umbuto, sokova ari ke*
754 *eto umbuto, Kokoda pambuo, koto ea, aramiko pure mo aravora.*"
Councillor Colin, Tórogota, 1966. After describing a number of devices used by magicians and miracles they wrought, Colin continued: "*Avo da pirisi embo na samani eo pambuto re koto ea, amiko donda aravo porakau aravo pure paruna.*" Translation: Police handcuffed village people and took them to Kokoda if they were believed to be telling lies. Court was held; then they would start work . . . When a summons was issued by the policeman, then those magic things would be put to work.

245 21. At the time the Waddell and Krinks study was done, only the younger men grew coffee; the authors therefore saw a correlation between age and coffee growing. During my restudy I found this correlation to be false, first because it did not apply to the clan omitted from the earlier authors' chosen sample, and secondly because the oldest men they studied began to grow coffee shortly after their departure. The substitution of German taro (*xantosoma* sp.) for classical taro (*colocasia* sp.)

245 appears to be the standard response to lack of time, rather than foregoing
coffee.

177 22. On New Guinea concepts of paid labour and the yield of such labour I
961 learned a great deal from Cloutier (1975–1978).

23. Auge's material on the rich who were inevitably suspected of being zombie
121 masters (1975) is a good illustration of our theme. But on this same
phenomenon, see also Ardener (1970).

171 24. For a somewhat similar analysis of suicide, this time in Polynesia, see
Firth (1967, Ch. 5) on suicide and risk taking in Tikopia.

25. For a further example of 'exploitation' of the defeated see Meggitt
(1977: 25–26).

121 26. In *Zur Genealogie der Moral*, Nietzsche (1954: 761–900) offers a detailed
discussion of the principle of reciprocity, concerning which he held views
rather radically opposed to those of Marcel Mauss. He regarded it as a
delusion to be eradicated. Orokaiva likewise regard it as a delusion if
practised outside the 'security circle' (see Schwimmer 1979a).

472 27. This argument, and indeed this entire essay, is close in orientation to
474 Dumont (1977) which can be read as an attempt to set limits on
economism in anthropology and elsewhere. We do not question the
importance of economics but the delimitation of economics as a separate
domain.

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